

Appendix B

Palmetto Railways Submittals

Navy Base Intermodal Facility Statement of Purpose and Need

February 12, 2014

Background

The South Carolina Department of Commerce Division of Public Railways was established to promote the economic viability of the state through rail services. Our mission is to provide safe, efficient, and cost effective rail solutions to facilitate the movement of freight and support economic development efforts throughout South Carolina. Public Railways primarily consisted of three rail lines; the Port Utilities Commission of Charleston (PUCC), Port Terminal Railroad of South Carolina (PTR), and the East Cooper and Berkeley Railroad (ECBR) which were formed in 1924, 1956, and 1977 respectively. In 1991, enabling legislation created Public Railways as a division of the South Carolina Department of Commerce. The PUC and PTR's primary business segment had been acting as a terminal switching provider at the South Carolina State Ports Authority. Through the years and with the creation of the ECBR, the business model expanded to include line haul services, industrial switching, bulk transload operations, and track construction and maintenance in support of various economic development projects throughout the state. In an effort to further expand business opportunities within the state and beyond its borders, Public Railways consolidated those entities into a single enterprise changing its d/b/a to Palmetto Railways effective October 1, 2013.

Current Charleston Intermodal Operations

A significant volume of containerized freight is transported by railroads today in the U.S. The movement of containers on trains is facilitated by freight transportation facilities where containers are transferred between trucks and rail cars. These movements between rail and truck are referred to as intermodal freight transportation and the facilities where those movements occur are called intermodal terminals.

Presently, there are two existing off-dock intermodal terminals in the Charleston region operated by the two Class I railroads that serve the Port of Charleston and various local businesses and industries. The existing intermodal facilities in the Charleston region include the CSX Ashley Junction intermodal terminal and the Norfolk Southern (NS) 7-Mile intermodal terminal. Container traffic moved through these facilities requires a public dray. Ashley Junction includes four working tracks with grounded trackside storage, as well as storage for chassis and containers on chassis. The NS 7-Mile yard has a single loading track and both grounded and wheeled storage for containers and chassis. Both terminals operate at high volumes today and are at or very near their sustainable throughput capacity. It has been reported that the stated combined capacity of the two existing intermodal terminals is 498,800 TEU¹. Without infrastructure improvements, which are limited by the lack of contiguous available land for future expansion and container stacking height restrictions that exist at those terminal, both terminals are limited in providing the future capacity required to meet the projected growth in the

¹ "Rail Access Study and Off-site Infrastructure", Davis & Floyd/TranSystems, October 14, 2005.

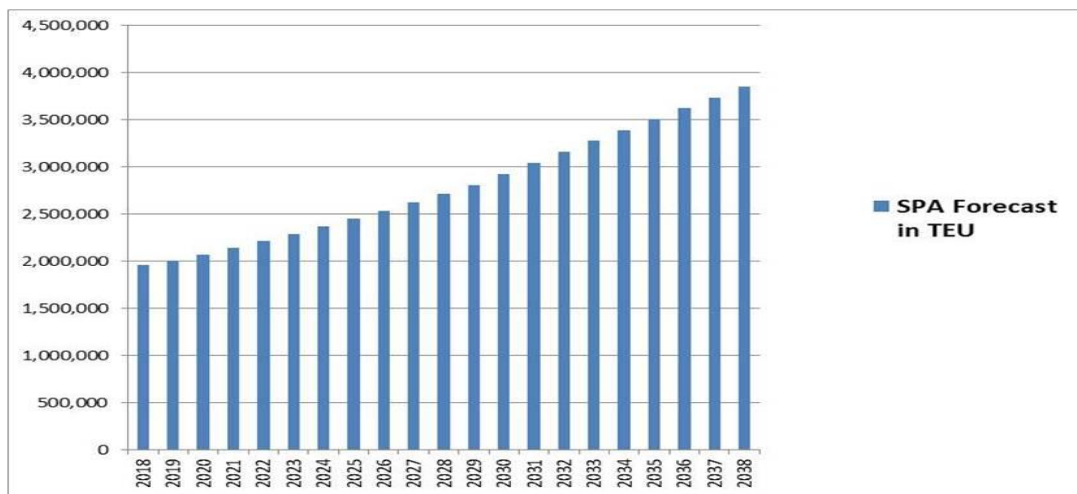
regions intermodal market. The goal of the proposed Navy Base Intermodal Facility project is to provide capacity to accommodate future intermodal growth within the region.

In recognition of the limited capacity of Charleston’s existing intermodal facilities and the projected container volume growth of the Port of Charleston, potential sites for intermodal capacity enhancement were identified in the 2008 South Carolina State Rail Plan, which included the Navy Base Intermodal Facility project location commonly referred to as the Clemson site. Palmetto Railways’ planning focused on the provision of equal access for both of South Carolina’s Class I line-haul carriers, CSX and NS, and proximity to the container terminals owned and operated by the South Carolina State Ports Authority (SPA), including the new container terminal presently under construction on a nearby site on the former Navy base.

Intermodal Capacity

The overwhelming majority of the Charleston intermodal volumes have direct correlation to the volume growth of the Port of Charleston as the majority of the containers are international import or export with a limited amount being domestic freight transport. The figure below shows the projected growth in container volume throughput through the Port of Charleston.

Figure 1: 2013 SPA Container Forecast (TEU’s)

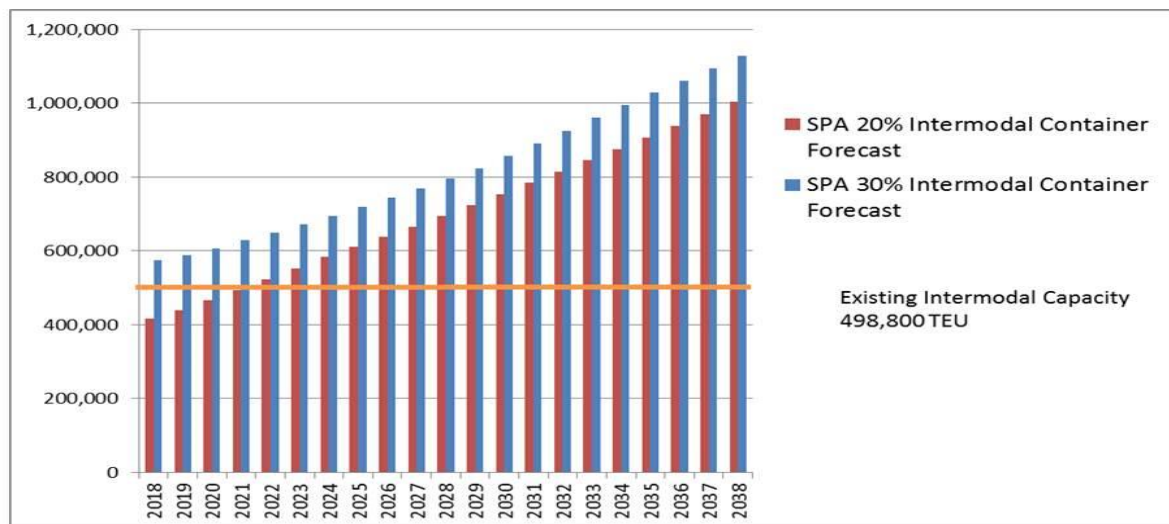


Source: SPA 2013

In determining the potential need for expanded intermodal capacity, Palmetto Railways has identified that the region’s existing capacity for handling intermodal containers will be exhausted in the near future. Today, and historically, intermodal containers account for approximately 13% of the total container volumes handled by the SPA. The creation of the Inland Port in Greer, SC is projected to raise the intermodal volume percentage to nearly 20% of the total throughput. At that percentage, intermodal container volumes will outgrow the region’s existing intermodal capacity in 2022. The Port of

Charleston's main competitor to the north, the Virginia Ports Authority, is currently handling intermodal containers at a rate of 30%+ of total volumes². The Port of Savannah, the main competitor to the south, is handling 19.2% of the total container volumes in intermodal containers in 2013 with consistent growth over the past four years³. Before investing in intermodal capacity through the development of new intermodal terminals, both ports historical intermodal volumes were at about 15%-18%. Palmetto Railways has conducted appropriate market analyses on the potential for intermodal growth in the region that has shown intermodal volumes associated with the SPA could grow to outpace the current intermodal percentage and reach 30% in the forecast horizon. With the projected growth and potential to gain additional market share, the Navy Base Intermodal Facility will be designed to accommodate the intermodal capacity beyond the 20 year forecast.

Figure Y 20% and 30% Intermodal Growth Forecast



Source: SPA and Palmetto Railways 2013

In order to handle the next generation of container vessels U.S. ports will require significant improvements to not only the waterside infrastructure but also the landside infrastructure⁴. The Navy Base Intermodal Facility will assist in accommodating post-Panamax container vessels and will have the ability to handle tremendous growth in daily container volumes. Post-Panamax vessels generate extremely high volumes of container traffic. The successful Post-Panamax container terminal will need to provide on-dock or near-dock intermodal rail capabilities to serve these vessels and to minimize the truck traffic and environmental impacts associated with huge, rapid transfers of containers. The

² <http://www.portofvirginia.com/development/port-stats.aspx>

³ Source Georgia Ports Authority

⁴ "U.S. Port and Inland Waterways Modernization Preparing for Post-Panamax Vessels", Institute for Water Resources U.S. Army Corps of Engineers 20 June 2012.

recognition of this issue is evident in the industry today as more than a dozen coastal states in the U.S. have commenced construction of new or expanded intermodal terminal projects to more efficiently link ports to inland distribution and manufacturing centers.

Conclusion

Palmetto Railways is committed to providing equal access to CSX and NS through true third-party control of the intermodal operations. A key benefit of building a state-of-the-art intermodal terminal is the potential to provide operating cost reductions through consolidating intermodal operations into one location. These reductions could be reflected in price differentials between direct road costs and direct rail costs for the distance transported, inclusive of additional handling costs. These benefits will also provide improved freight service reliability and availability to the customers of the Port of Charleston, CSX and NS.

Palmetto Railways sees that the regional infrastructure lacks the intermodal capacity and capability to compete with the nearby competitors of Savannah and Virginia, both operating on-dock intermodal facilities; thereby, eliminating a public dray move. The Navy Base Intermodal Facility provides a capable and competitive tool as a hybrid near-dock/on-dock intermodal facility for the future growth of containerized cargo projected to move through the Port of Charleston. The projected capacity of the Navy Base Intermodal Facility will exceed the most optimistic projections of potential intermodal throughput of international cargo through the Port of Charleston. Its construction and operation enhances the ability of the Port of Charleston and various industries across the region to grow above and beyond current and projected capabilities.

It is important that the movement of freight driving jobs and economic growth in the region continues to be facilitated to meet future demand and ensure the sustainability and competitive environment for supporting that growth. It is also important to respect the quality of life of the residents in neighborhoods where terminals exist and where future freight transportation facilities are proposed today. Palmetto Railways intends to employ sustainable or green technologies, such as electric wide-span gantry cranes that possess absolute zero air emissions on site and minimal noise, into the development and operation of the intermodal facility to ensure that the quality of life for adjacent communities can be preserved if not enhanced. To that end, Palmetto Railways has studied the intermodal freight situation in the Charleston region for a number of years and has decided to proceed with the preparation of an Environmental Impact Statement (EIS) to evaluate the alternatives to improve intermodal freight movements and their related impacts to address potential issues.

September 8, 2015

Ms. Tina Hadden
Regulatory Chief
U.S. Army Corps of Engineers
69-A Hagood Ave.
Charleston, S.C. 29403

Re: Improved Proposed Project for the NBIF

Dear Ms. Hadden:

In 2013, Palmetto Railways proposed the construction of an intermodal transfer facility at the former Charleston Naval Complex in North Charleston. A public scoping meeting was held on November 13, 2013 and a community meeting was held on May 6, 2014. Since that time, other opportunities have presented themselves that allow for improvements in operational characteristics and minimization of impacts. The project area remain the same, but one element has been added and several refined to better meet the project need, improve logistics and feasibility, and avoid and minimize overall project impacts.

The purpose of the Proposed Project is, in brief, to provide a state-of-the-art intermodal hub to serve the Port of Charleston with equal access to the two Class I rail carriers serving the area (*i.e.*, CSX Transportation (CSX) and Norfolk Southern Railways (NS)) to meet future demand, as the existing individual CSX and NS intermodal rail yards are reaching capacity. Rail transportation is only economically and logistically viable and feasible within certain operational parameters, and location and proximity to cargo is a crucial factor in that analysis. Another crucial factor is the accessibility for operations from a logistical perspective, such as entry and exit into the facility by each rail line. In light of additional operational considerations and opportunities for an improved project, Palmetto Railways proposes modifications to the Proposed Project. The most notable changes from the prior proposal are the

addition of a Southern Rail Connection and the realignment of the Northern Rail Connection.

The northern rail realignment will provide a connection through an existing interchange point with the North Charleston Terminal Company (NCTC) providing access for NS to the NBIF. This shift provides the benefit of improved accessibility for NS. It has no new at-grade crossings and avoids train movements along Spruill Avenue, north of McMillan Avenue, thus eliminating potential impacts to residential neighborhoods and Chicora Elementary along the western side of Spruill Avenue.

The addition of the southern rail connection provides direct access to the NBIF for CSX. While no southern route was initially proposed, further negotiations have allowed Palmetto Railways this opportunity to extend below the existing CSX Cooper Yard, loop down through an industrial area and connect into the existing CSX line. It will utilize existing CSX right-of-way at the south end of the project site and through the existing CSX Cooper Yard. This alignment travels through an industrial area, creates only one major at-grade rail crossing, and minimizes impacts to current CSX operations in Cooper Yard. It also allows for CSX to make a continuous direct move from the NBIF to its other facilities allowing trains to travel north or south out of Charleston, and could result in the elimination of existing CSX trackage utilization that interferes with certain neighborhoods. There is also an efficiency component with adding the southern connection to the northern connection—having both provides both CSX and NS the opportunity to have an alternate route to and from the facility in case of an emergency.

If you have any questions, please do not hesitate to contact me.

Sincerely,



Jeffrey M. McWhorter
President and CEO

September 8, 2015

Mr. Nathaniel Ball
U.S. Army Corps of Engineers
69-A Hagood Ave.
Charleston, S.C. 29403

Re: Improved Proposed Project for the NBIF

Dear Mr. Ball:

In 2013, Palmetto Railways proposed the construction of an intermodal transfer facility at the former Charleston Naval Complex in North Charleston, South Carolina. A public scoping meeting was held on November 13, 2013. A community meeting was held on May 6, 2014. Since the meetings have been conducted and as part of the NEPA evaluative process, other opportunities have presented themselves that allow for improvements in operational characteristics and minimization of impacts. The general vicinity and project area remain the same, but one element has been added and several refined to better meet the project need, improve logistics and feasibility, and avoid and minimize overall project impacts. A revised drawing of the Proposed Project is enclosed as Exhibit A.

The purpose of the Proposed Project is, in brief, to provide a state-of-the-art intermodal hub to serve the Port of Charleston with equal access to the two Class I rail carriers serving the area (*i.e.*, CSX Transportation (CSX) and Norfolk Southern Railways (NS)) to meet future demand, as the existing CSX and NS individual intermodal railyards in the area are reaching their maximum throughput capacity. While there are a number of sources of cargo for rail service, proximity and ease of access to the marine terminals is a necessary consideration. Rail transportation is only economically and logistically viable and feasible within certain operational parameters, and location and proximity to cargo is a crucial factor in that analysis. Another crucial factor is the accessibility for operations from a logistical perspective, such as entry and exit into the facility by each rail line to ensure efficient operations and ensure economical dispatch of the trains with the least impact and disruption on the communities and minimize other impacts. In light of additional

operational considerations and opportunities for an improved project, Palmetto Railways proposes modifications to the Proposed Project.

The Proposed Project consists of six elements:

- Northern Rail Connection;
- Southern Rail Connection;
- Cosgrove McMillan Overpass;
- Navy Base Intermodal Facility (NBIF);
- Hobson/Bainbridge Realignment & Viaduct Removal; and
- Private Drayage Road Elements.

There are four notable changes from the prior proposal: (1) a Southern Rail Connection is proposed; (2) realignment of the Northern Rail Connection; (3) changes to the NBIF design and operation; and (4) realignment of the Drayage Road. Each of the project elements is summarized below, and the basic rationale for these proposed changes from the originally proposed project is also discussed below.

Proposed Project Element Descriptions

1) *The Northern Rail Connection*

The northern rail connection will provide a connection through an existing interchange point with the North Charleston Terminal Company (NCTC) providing access for NS to the NBIF. A drawing of the northern rail connection is included as Exhibit B. A second railroad bridge will be constructed across Noisette Creek adjacent to the existing bridge to provide necessary capacity for a second track. This northern lead would act as both switching and arrival/departure tracks. It provides the benefit of improved accessibility to the NBIF for NS, as it utilizes an existing interchange point. This revision has no new at-grade crossings and avoids train movements along Spruill Avenue, north of McMillan Avenue, thus eliminating potential impacts to residential neighborhoods and Chicora Elementary along the western side of Spruill Avenue.

2) *Southern Rail Connection*

A southern rail connection is added in this revised Proposed Project to provide direct access to the NBIF for CSX. A drawing of the proposed Southern Rail Connection is enclosed as Exhibit G. It will utilize existing CSX right-of-way (ROW) in the vicinity

of the Viaduct at the south end of the project site and through the existing CSX Cooper Yard.¹ Additional ROW will be acquired for the continuation of the southern rail connection through the industrial properties just north of Milford Street. This alignment travels through an industrial area, creates only one major at-grade rail crossing, minimizes impacts to current CSX operations in Cooper Yard, and offers track geometry using an eight degree curve.

The southern connection allows for CSX to make a continuous direct move from the NBIF to Ashley Junction or to the A-line allowing trains to travel north or south out of Charleston. Adding this element to the Proposed Project improves logistical and operational efficiencies, ensuring better and equal accessibility for CSX to the NBIF as opposed to running CSX through a northern route. While the southern rail connection creates additional impacts, this revision allows for project modifications to avoid or minimize overall impacts of the Proposed Project.²

3) *Cosgrove McMillan Overpass*

The Proposed Project requires the realignment and bridging of Cosgrove Avenue from the area of Spruill Avenue, connecting to what is now McMillan Avenue near Noisette Boulevard. A drawing of the Cosgrove McMillan Overpass is enclosed as Exhibit C. This overpass will create a grade separation, allowing for the undisturbed flow of both vehicular and rail traffic. This will serve as one of the main vehicular access points to the NBIF and will provide a direct connection to I-26. The Cosgrove Avenue realignment will result in the elimination of McMillan Avenue from the vicinity of Kephart Street to St. John's Boulevard. The remainder of McMillan Avenue will become an extension of St. John's Avenue connecting to Spruill Avenue.

4) *NBIF*

The NBIF will contain the following main components: an earthen berm and sound attenuation and security wall along the western border of the site; railroad tracks (totaling 90,000 track feet) for classification, processing, arrival, and departure of

¹ The ability to utilize the existing CSX ROW for the southern lead track will minimize impacts estimated in the prior proposal.

² Further, having a north and south connection to the facility provides both CSX and NS the opportunity to have an alternate route to and from the facility in case of an emergency. This ensures the continued free flow of commerce and enhances the competitive position of Charleston in the freight transportation industry.

trains; electric wide-span gantry cranes; container stacking areas; administrative buildings; an automated gate system; and vehicle driving lanes. Drawings of the NBIF are enclosed as Exhibits D-1 to D-5. Rail mounted wide-span electric gantry cranes are planned for use in lift operations. The cranes will span all processing tracks, adjacent container stacking areas, and truck lanes and have the ability to service all of those areas. The cranes will move containers directly from truck-to-rail and rail-to-truck, and there will be a stacking area to store both empty and loaded containers waiting to be loaded onto trucks or trains. The use of a semi-automated gate system will maximize efficiency and reduce queuing time and space needed as compared to a similar conventional intermodal facility. With the additional southern rail connection, trains will be divided between the north (NS) and south (CSX) ends of the facility, creating greater efficiency and fluidity by allowing for trains to originate, terminate, and to switch within the processing and classification areas simultaneously. While this operational enhancement does not impact the originally proposed footprint of the NBIF, it necessarily requires modifications to the on-site layout and design. A revised drawing of the NBIF is enclosed as Exhibit D.

5) *Viaduct Road Overpass Removal & Hobson/Bainbridge Realignment*

To ensure the future capacity needs for intermodal transportation of the region are satisfied and create sufficient track and yard capability, the facility footprint must extend beyond Viaduct Road.³ The removal of the Viaduct Road Overpass will require the realignment of Hobson Avenue and Bainbridge Avenue and improvement of the intersection. A drawing of the Viaduct Road Overpass Removal & Hobson/Bainbridge Realignment is enclosed as Exhibit E. This revised alignment makes the movement from the NBIF to I-26 via the Port Access Road a primary route for truck traffic traveling to and from the NBIF.⁴

³ The removal of the Viaduct Road overpass will not adversely impact ingress and egress to the south end of the CNC as it will not be removed until the local access (Stromboli Corridor) to the Port Access Road is completed.

⁴ This is also consistent with the expressed local government and community preference for truck traffic to be directed to the Port Access Road for interstate access.

Mr. Nathaniel Ball

August 21, 2015

Page 5 of 5

6) *Drayage Road*

The NBIF will utilize a private drayage road to the Charleston Navy Base Container Terminal which is currently under construction and scheduled to open in 2019.⁵ This direct and private connection will dramatically reduce drayage impacts on public roads, transit times, and costs associated with moving containers to and from the existing Norfolk Southern and CSX intermodal facilities. A drawing of the Drayage Road is enclosed as Exhibit F.

Also enclosed are exhibits showing estimated wetland impacts areas and fill quantities for each element of the Proposed Project.

Should you have any questions or require additional information, please do not hesitate contact me. Thank you for your time and consideration, and Palmetto Railways looks forward to our continuing work on this important infrastructure improvement project.

Sincerely,



T. Ravenel
Palmetto Railways
Director of Special Projects

⁵ This is also consistent with the expressed local government and community preference for private road access between an intermodal rail facility and the marine container terminal, as reflected in the settlement agreement and court order dated August 6, 2010. *S.C. Coastal Conservation League v. U.S. Army Corps of Eng'rs*, 2:07-cv-03802-CWH (D.S.C.).

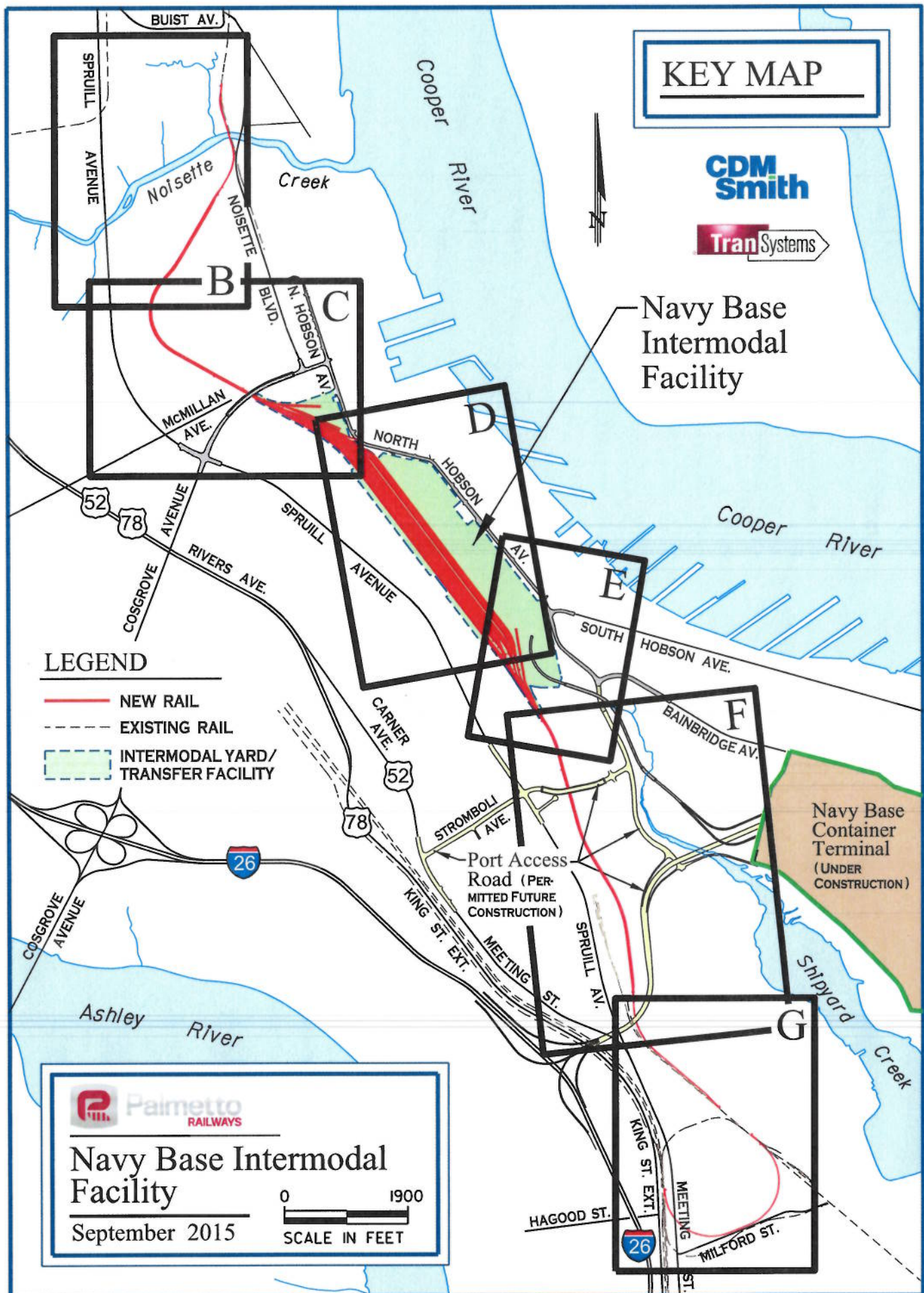


Exhibit A


CDM
Smith

TranSystems

Navy Base
Intermodal
Facility

LEGEND

- NEW RAIL
- - - EXISTING RAIL
- INTERMODAL YARD/
TRANSFER FACILITY

 Paimetto
RAILWAYS

Navy Base Intermodal Facility

September 2015

0 1900
SCALE IN FEET



Navy Base Intermodal Facility

September 2015

0 400
SCALE IN FEET

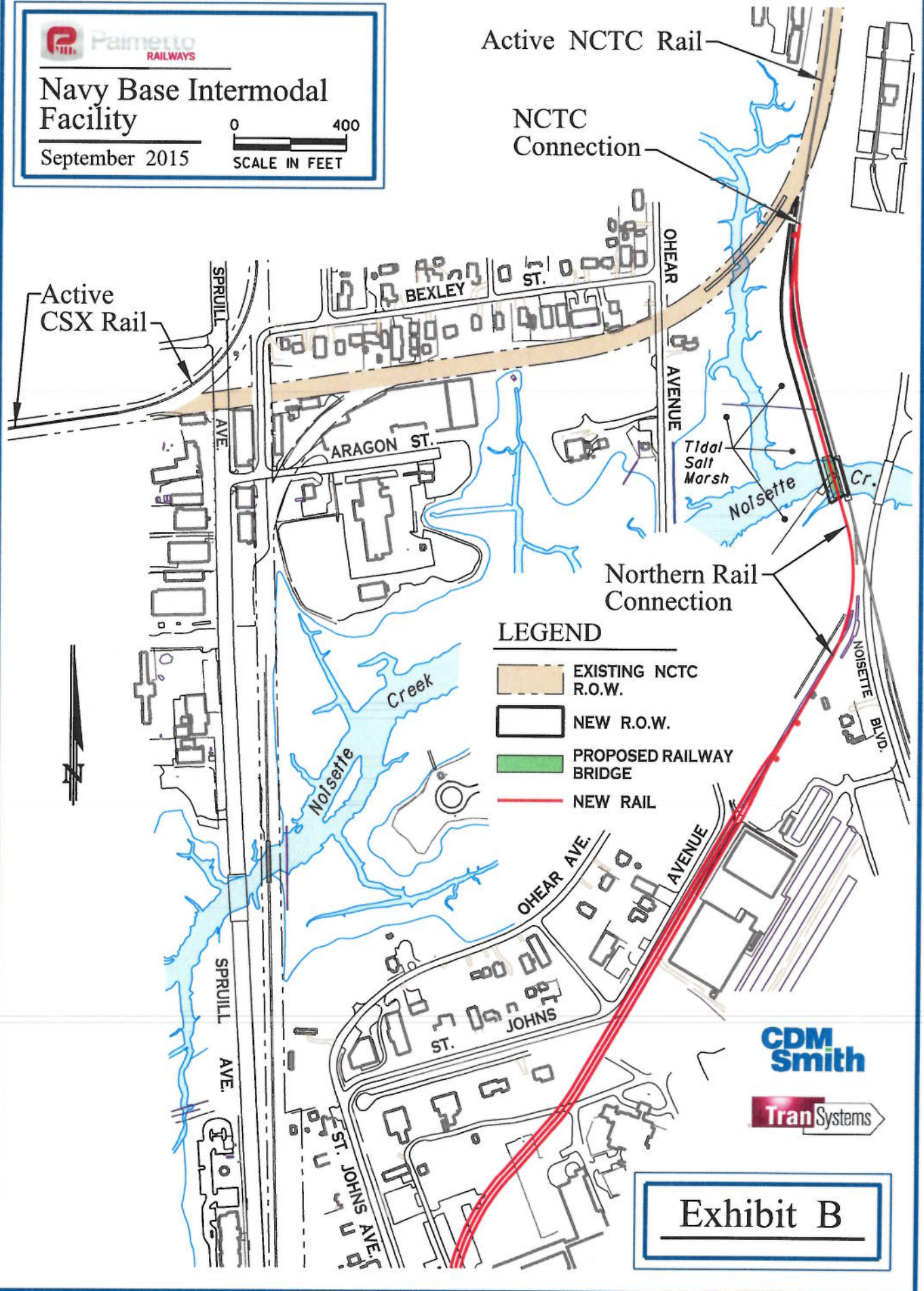
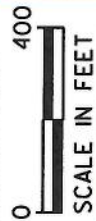


Exhibit B



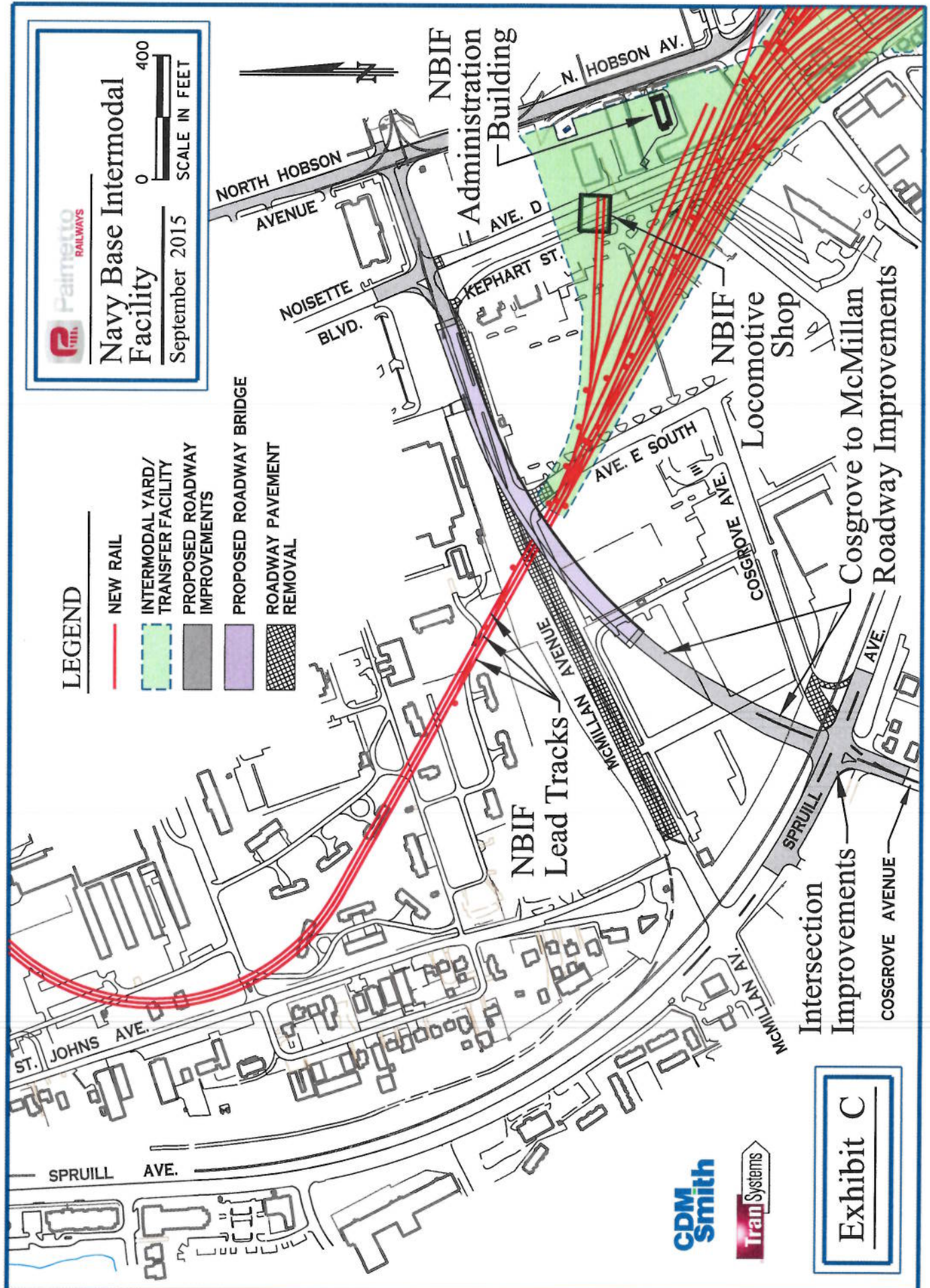
Navy Base Intermodal Facility

September 2015



LEGEND

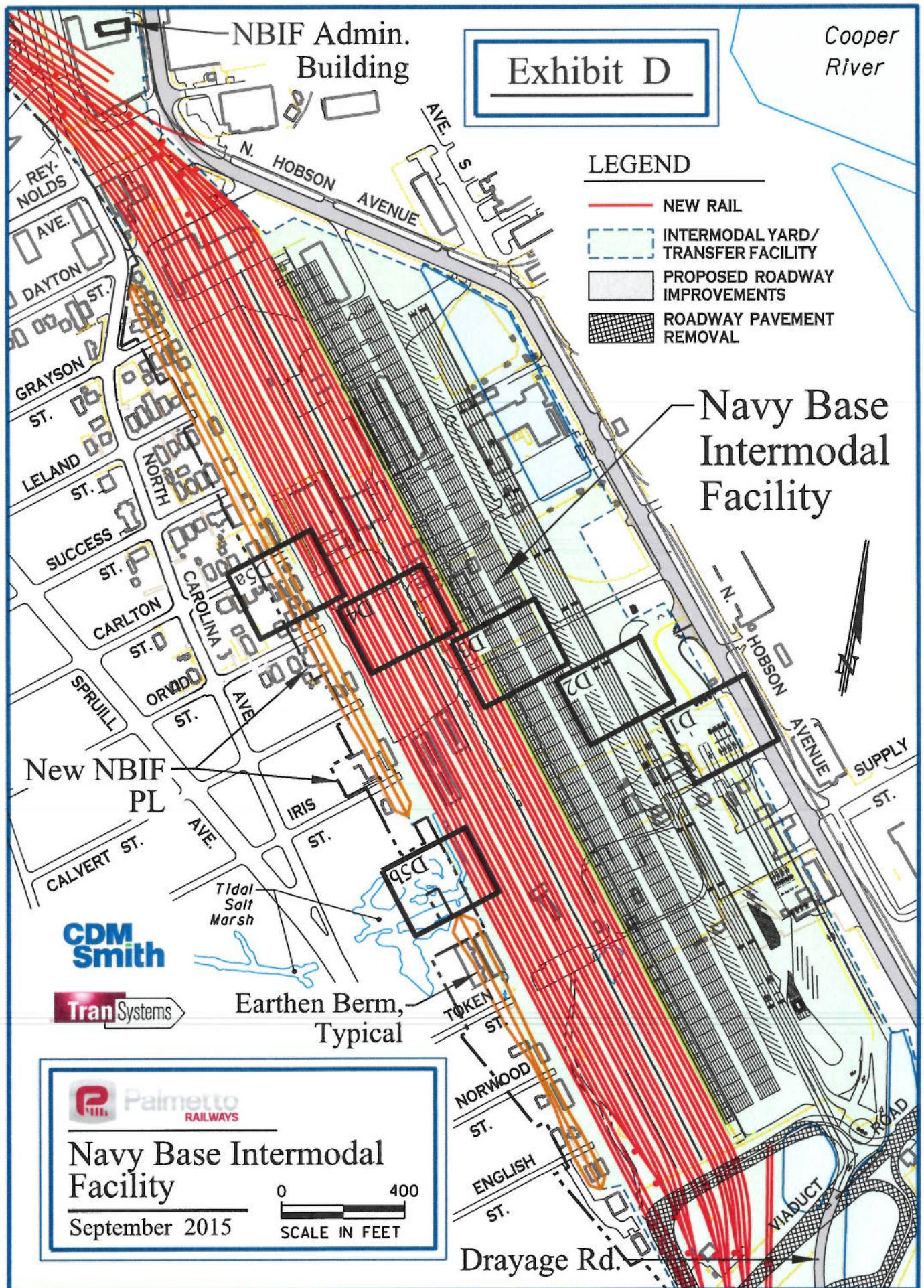
- NEW RAIL
- INTERMODAL YARD/TRANSFER FACILITY
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED ROADWAY BRIDGE
- ROADWAY PAVEMENT REMOVAL



CDM
Smith

Tran Systems

Exhibit C



MATCH LINE - SEE EXHIBIT D2

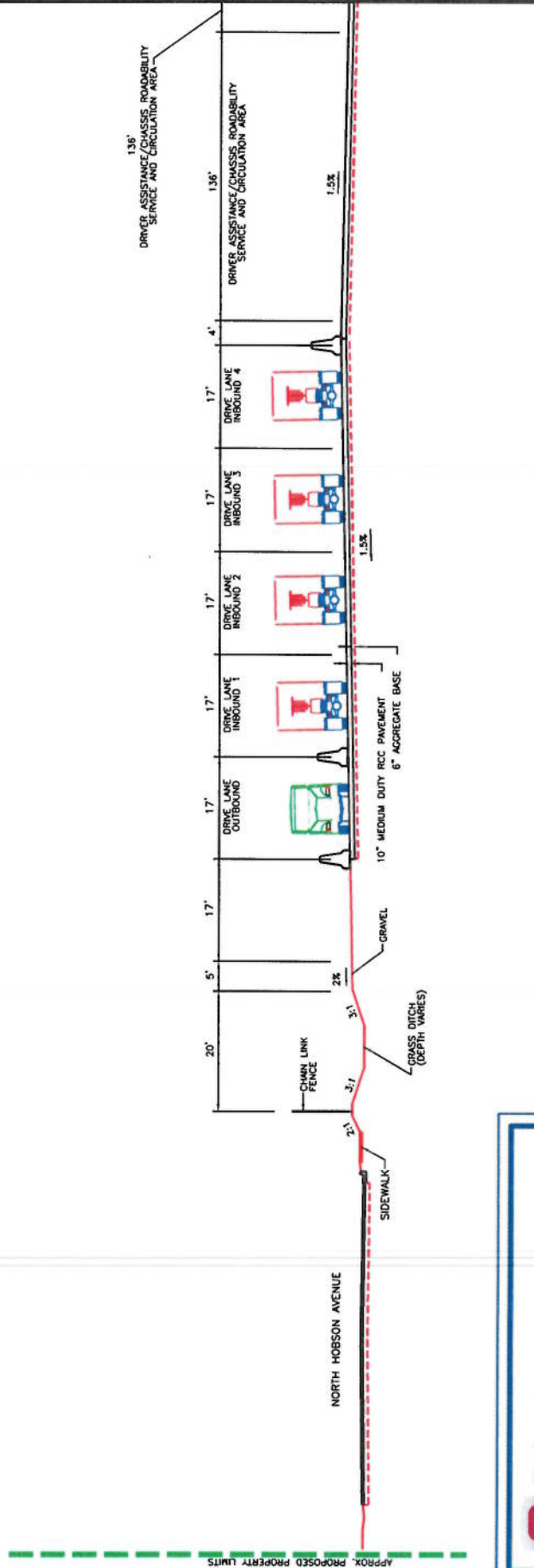


Exhibit D1

CDM Smith

Iran Systems

Railyard Typical Section

Sheet 1 of 6

Palmetto RAILWAYS

Navy Base Intermodal Facility

September 2015 Not to Scale

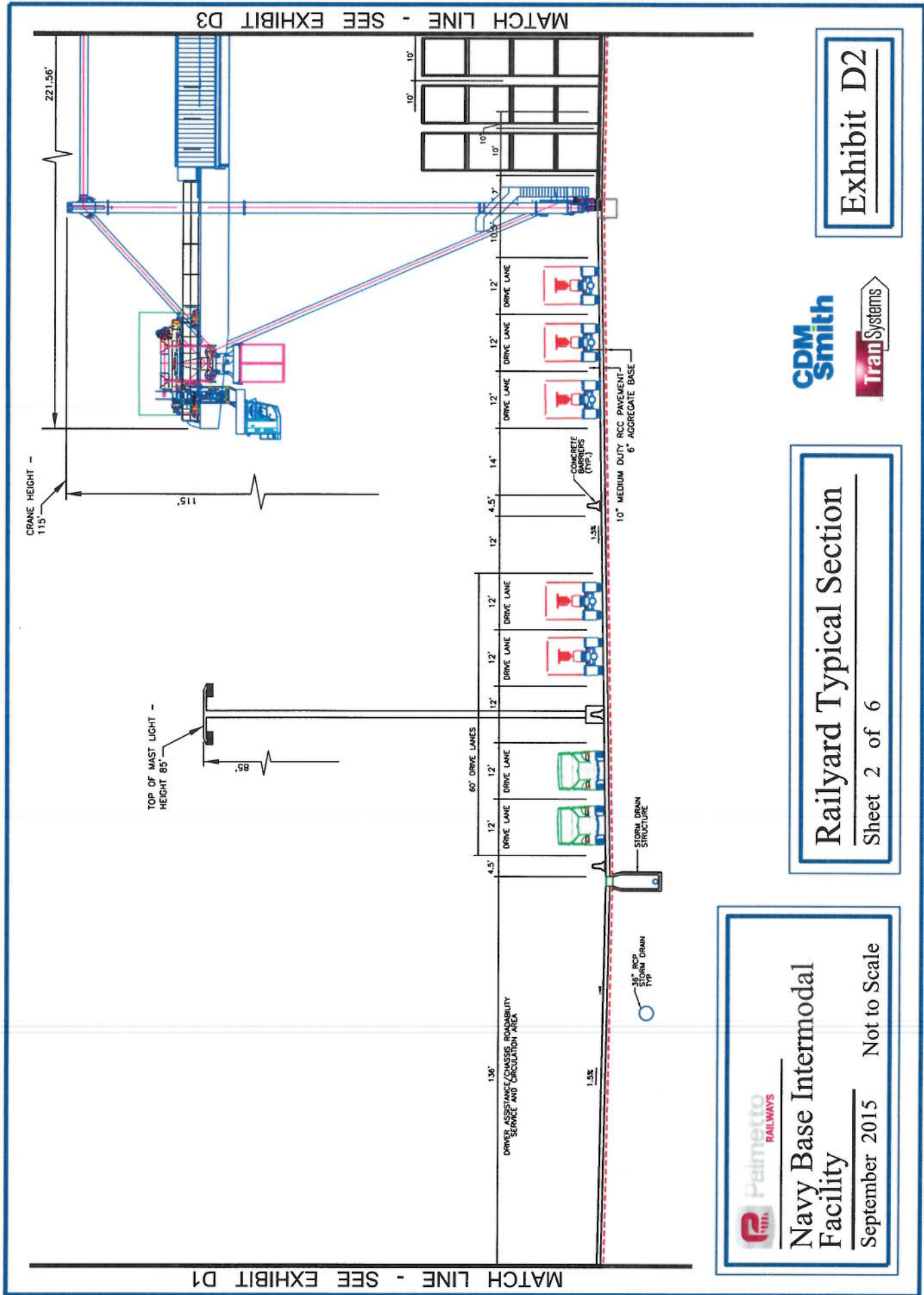


Exhibit D2

CDM Smith

TranSystems

Railyard Typical Section

Sheet 2 of 6

Palmetto RAILWAYS

Navy Base Intermodal Facility

September 2015

Not to Scale

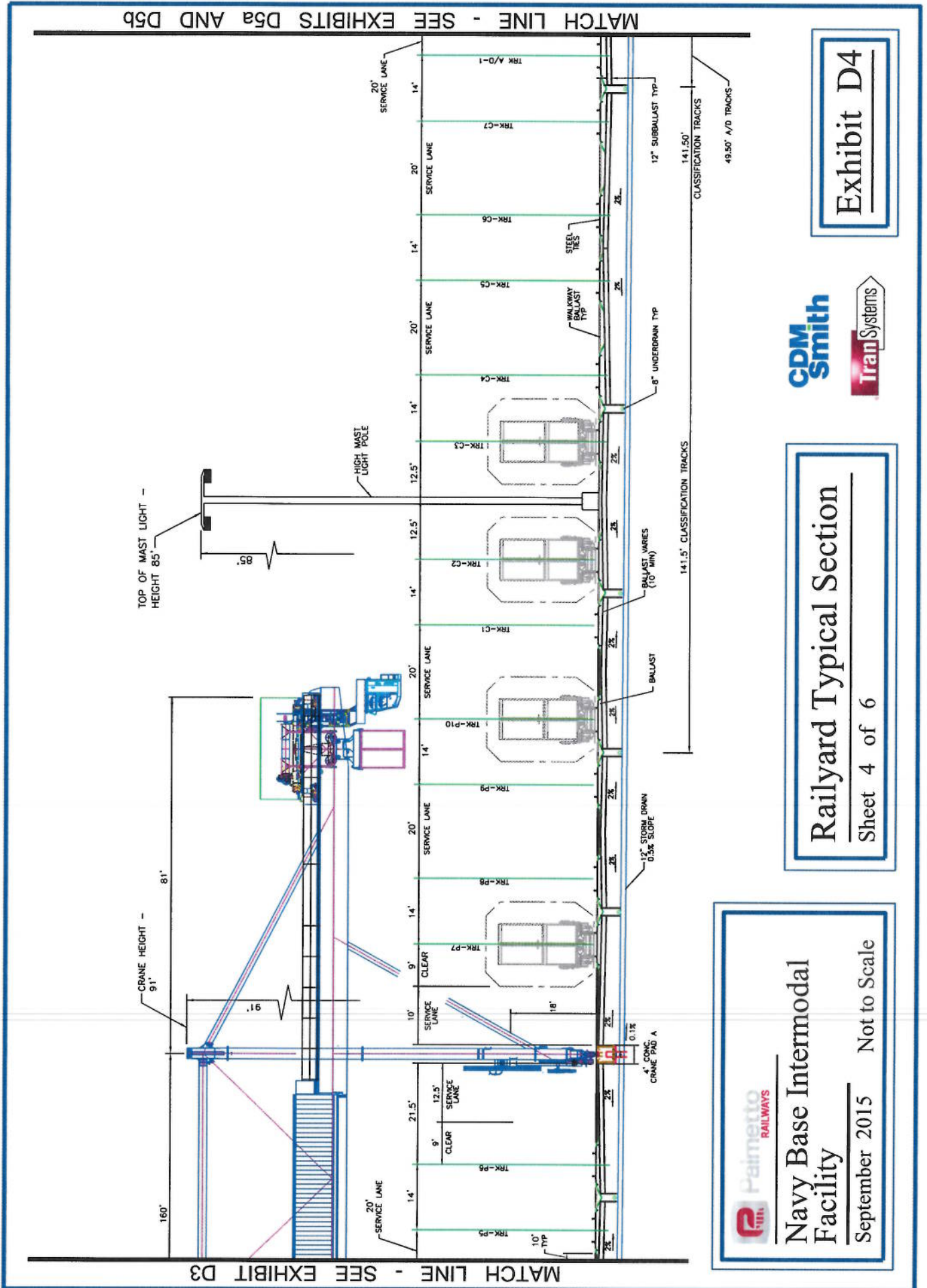


Exhibit D4

CDM Smith

TranSystems

Railyard Typical Section

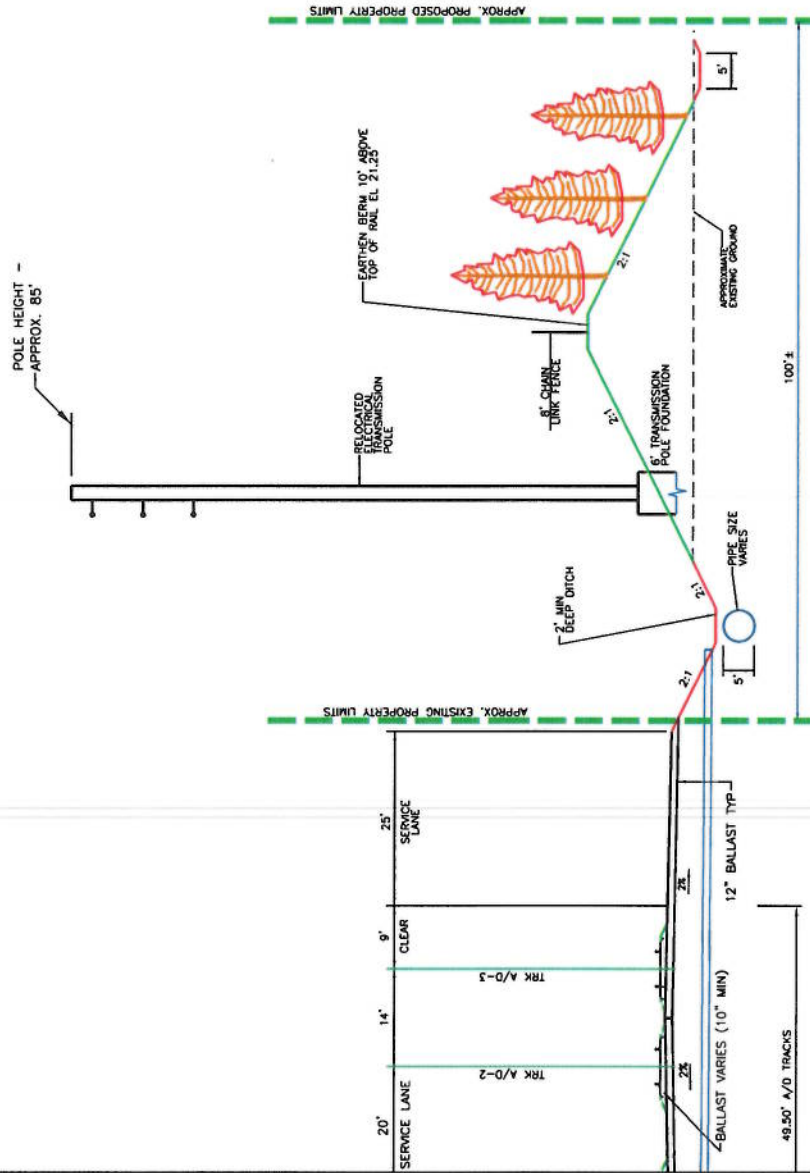
Sheet 4 of 6

Palmerton RAILWAYS

Navy Base Intermodal Facility

September 2015 Not to Scale

MATCH LINE - SEE EXHIBIT D4

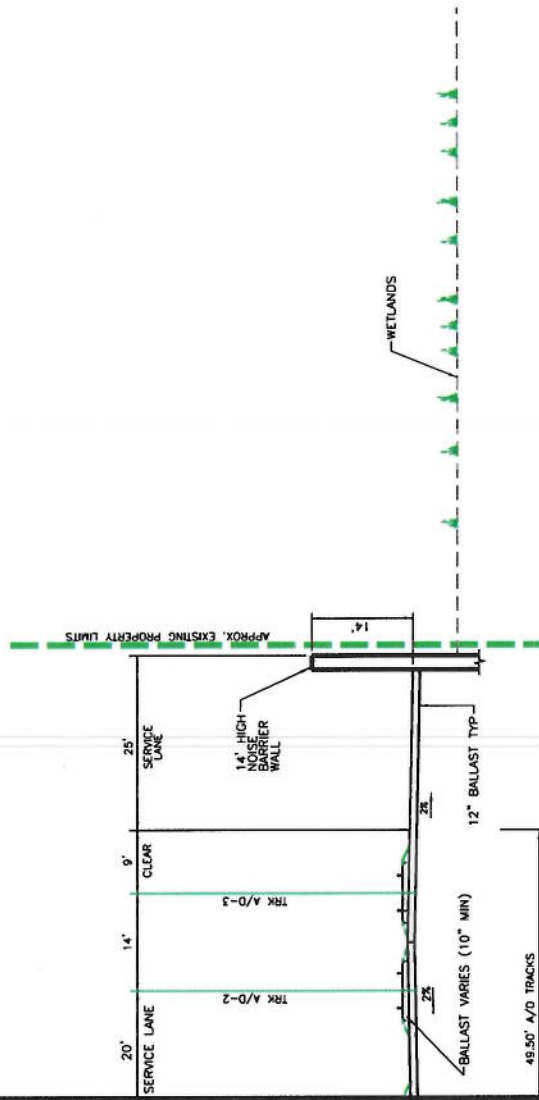


Railyard Typical Section - with Berm

Sheet 5 of 6

Exhibit D5a

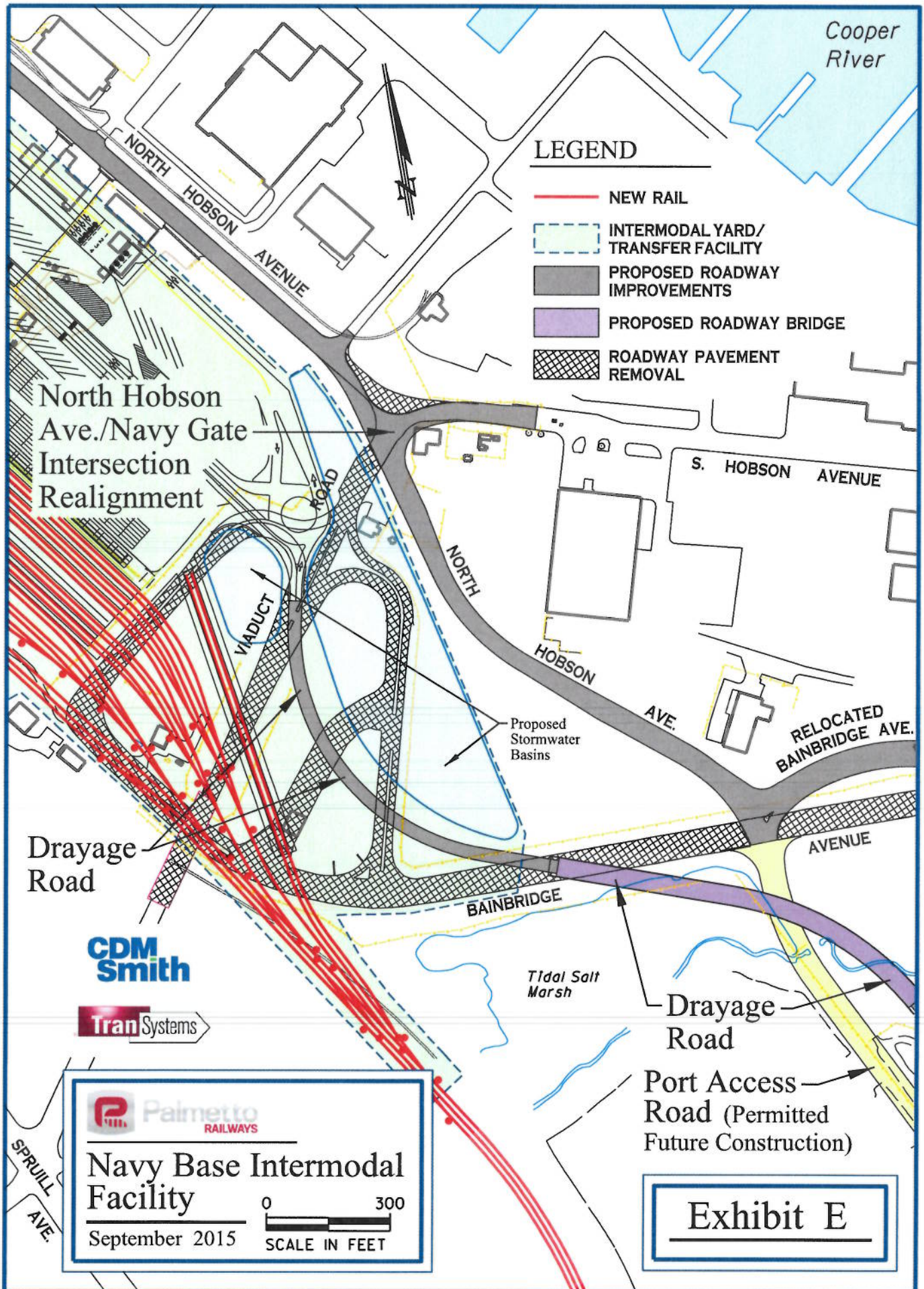
MATCH LINE - SEE EXHIBIT D4

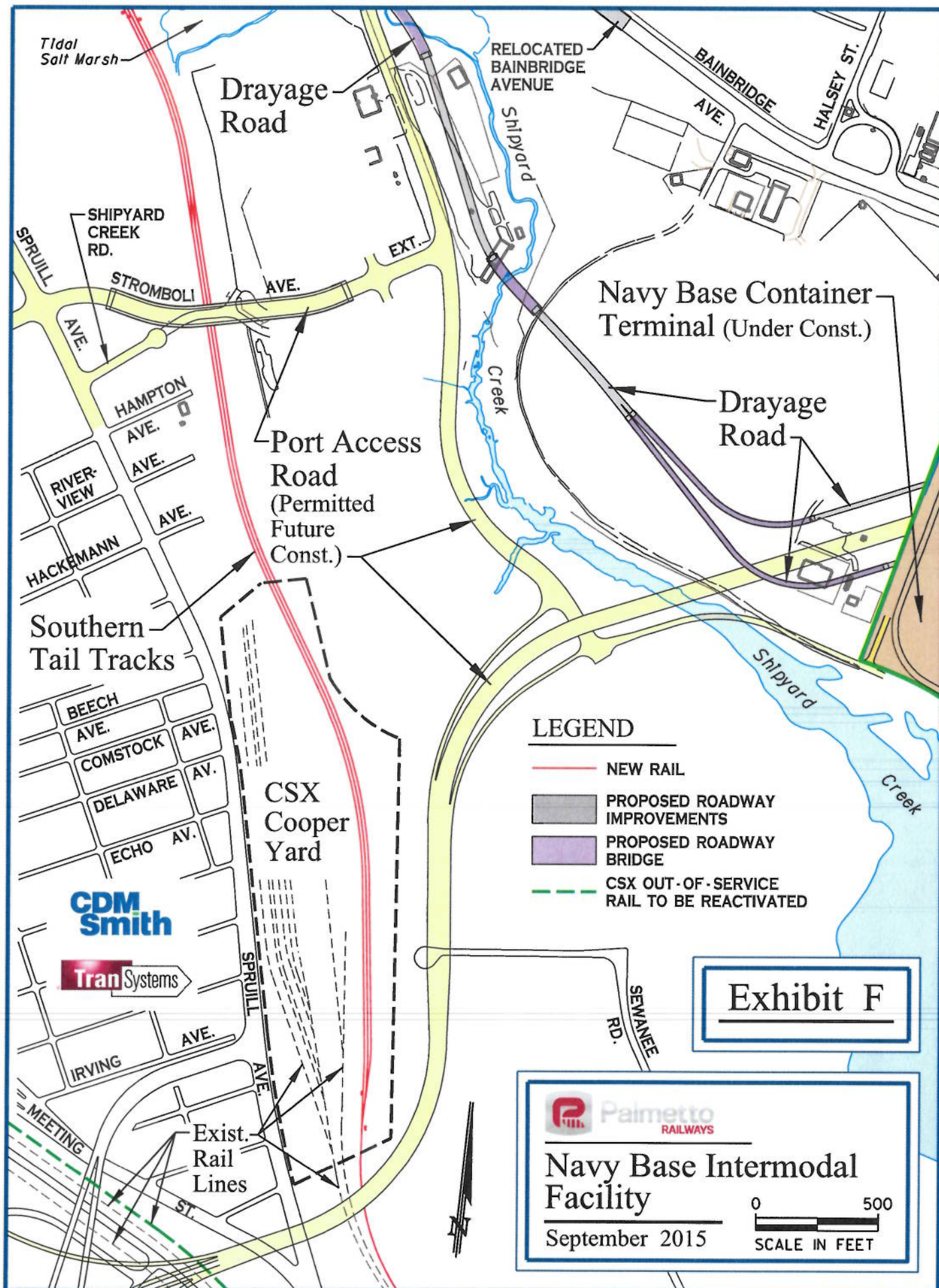


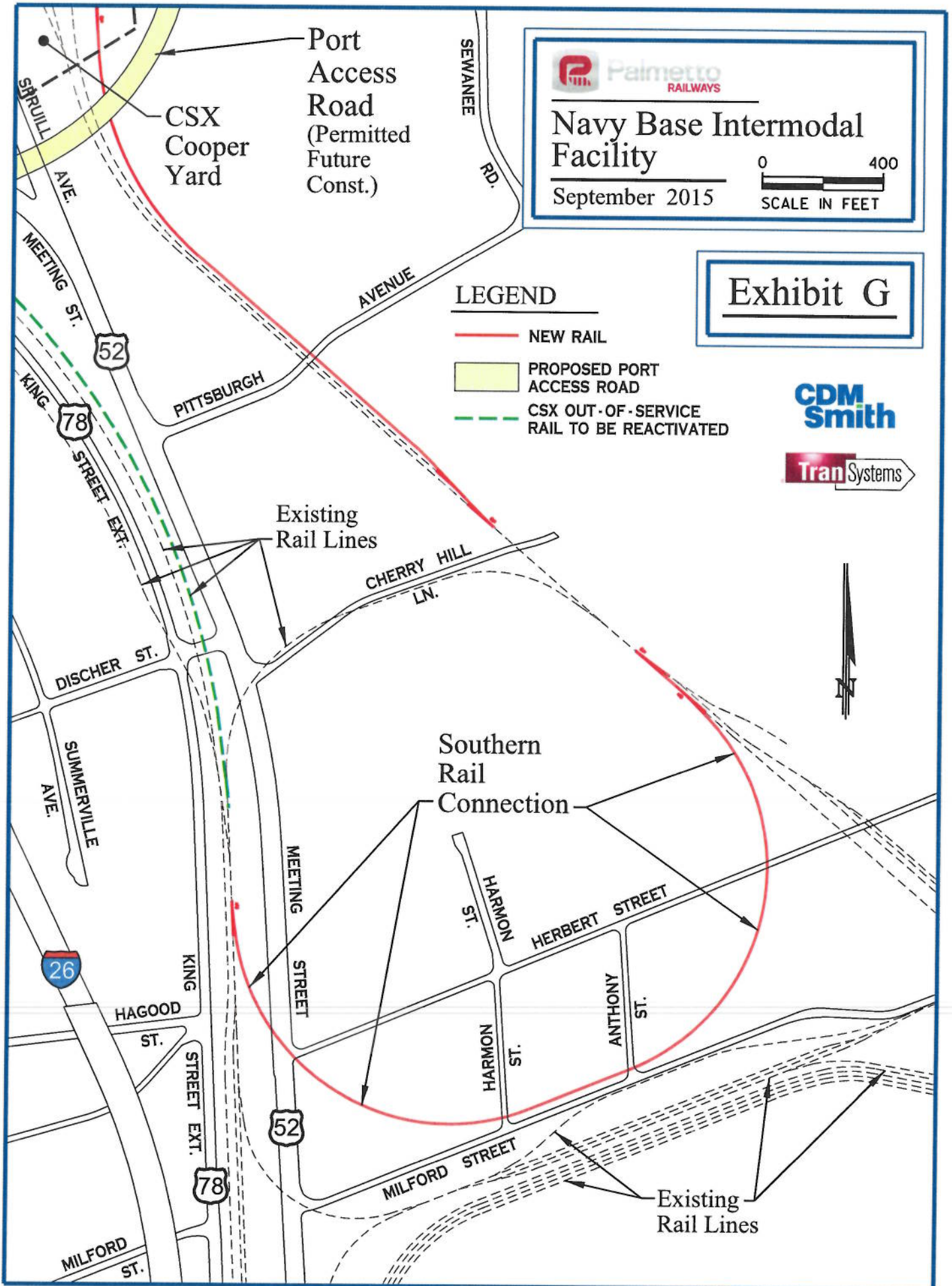
Railyard Typical Section - with Noise Barrier Wall

Sheet 6 of 6


Exhibit D5b









**Palmetto
RAILWAYS**

**Navy Base Intermodal
Facility**

September 2015

0300

SCALE IN FEET

LEGEND

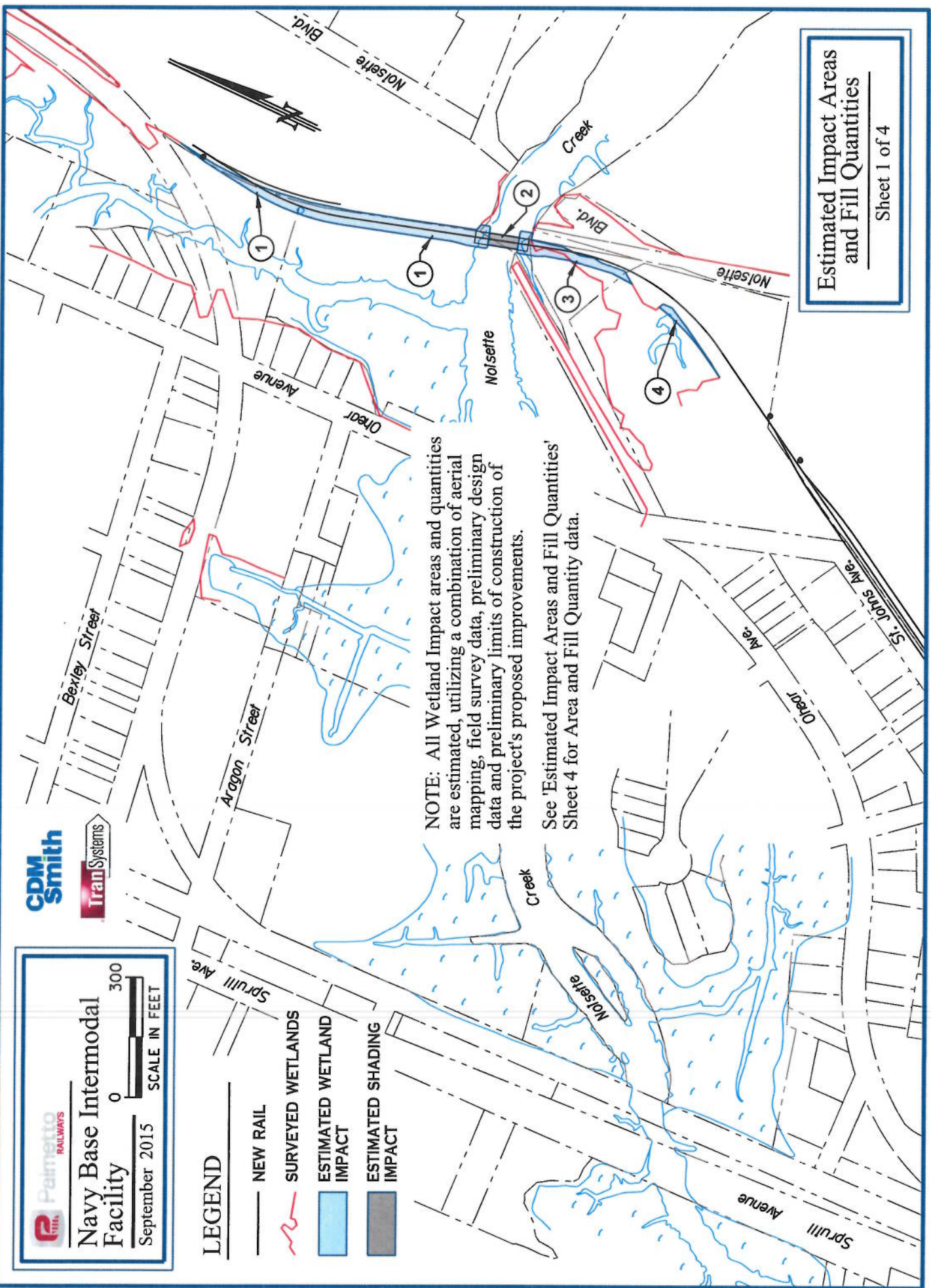
- NEW RAIL
- SURVEYED WETLANDS
- ESTIMATED WETLAND IMPACT
- ESTIMATED SHADING IMPACT

NOTE: All Wetland Impact areas and quantities are estimated, utilizing a combination of aerial mapping, field survey data, preliminary design data and preliminary limits of construction of the project's proposed improvements.

See 'Estimated Impact Areas and Fill Quantities' Sheet 4 for Area and Fill Quantity data.

**Estimated Impact Areas
and Fill Quantities**

Sheet 1 of 4



Estimated Impact Areas and Fill Quantities

Sheet 2 of 4

LEGEND

NEW RAIL

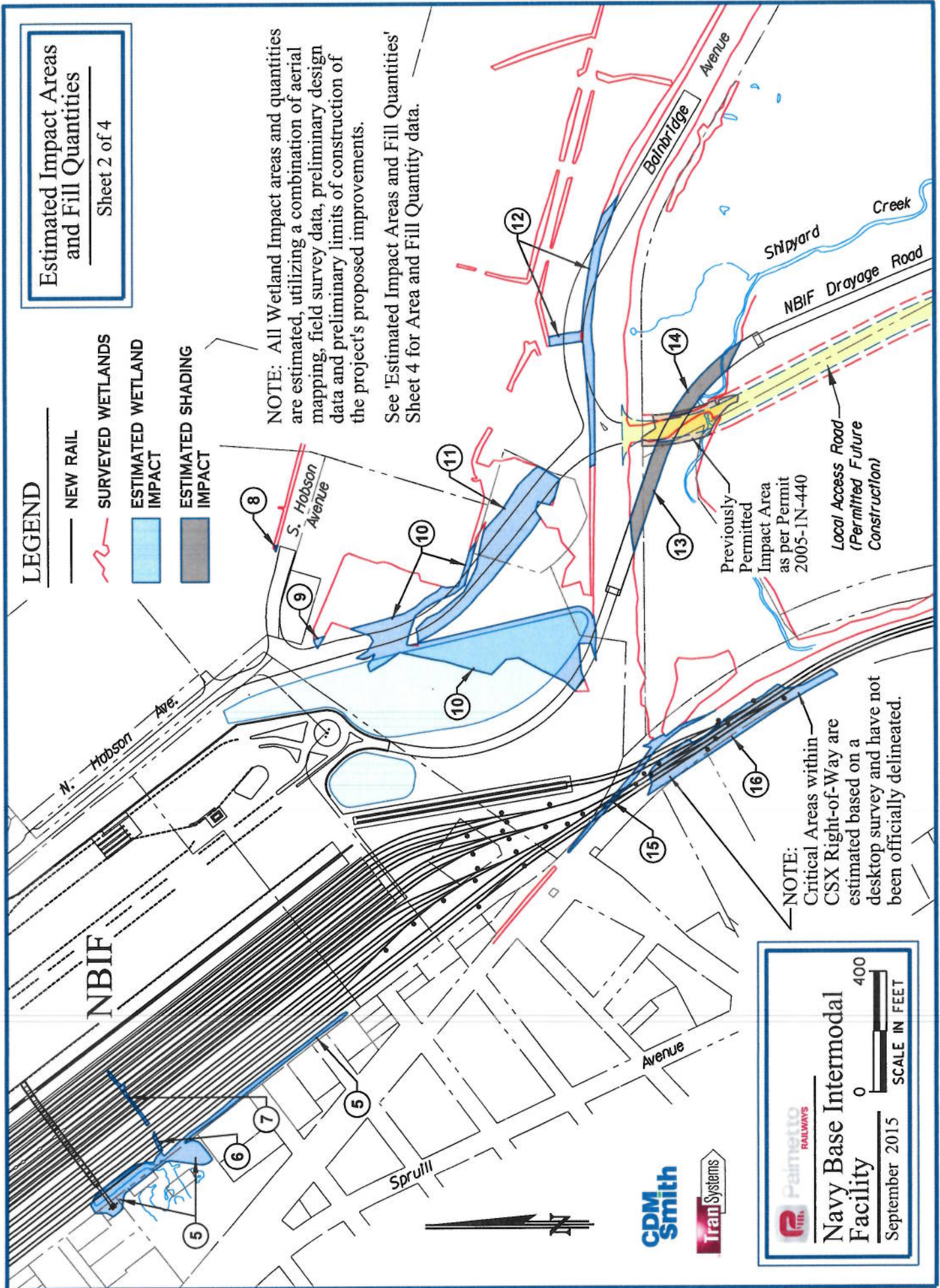
SURVEYED WETLANDS

ESTIMATED WETLAND IMPACT

ESTIMATED SHADING IMPACT

NOTE: All Wetland Impact areas and quantities are estimated, utilizing a combination of aerial mapping, field survey data, preliminary design data and preliminary limits of construction of the project's proposed improvements.

See 'Estimated Impact Areas and Fill Quantities' Sheet 4 for Area and Fill Quantity data.



NOTE: Critical Areas within CSX Right-of-Way are estimated based on a desktop survey and have not been officially delineated.

Navy Base Intermodal Facility

September 2015

SCALE IN FEET
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CDM Smith

TranSystems



Navy Base Intermodal Facility

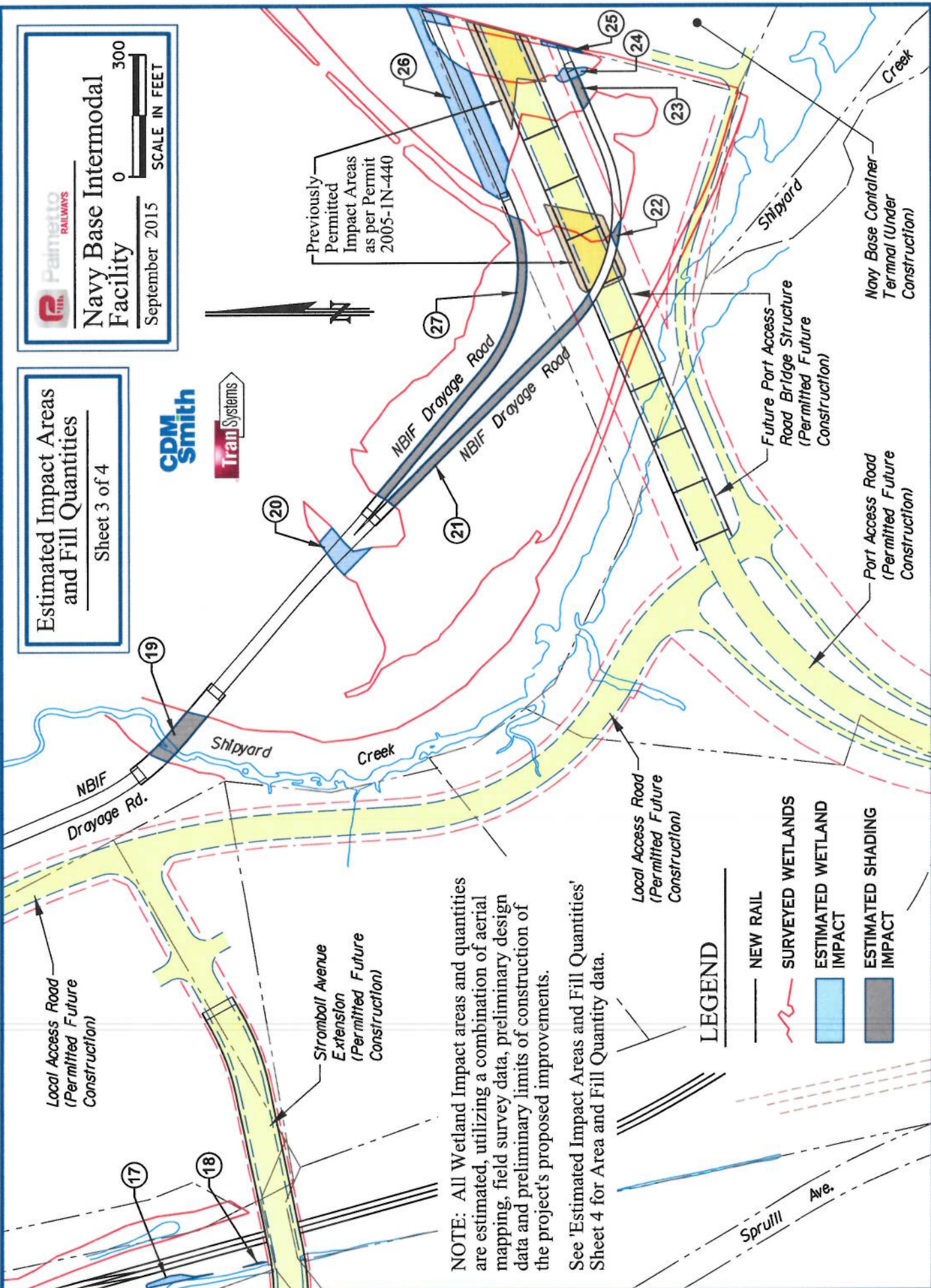
September 2015



Estimated Impact Areas and Fill Quantities

Sheet 3 of 4

CDM Smith



Previously Permitted Impact Areas as per Permit 2005-1N-440

20

21

26

25

24

23

22

NBIF Droyage Rd.

Creek

Shipyard

Local Access Road (Permitted Future Construction)

Stromball Avenue Extension (Permitted Future Construction)

Local Access Road (Permitted Future Construction)

Future Port Access Road Bridge Structure (Permitted Future Construction)

Port Access Road (Permitted Future Construction)

Navy Base Container Terminal (Under Construction)

LEGEND

NEW RAIL

SURVEYED WETLANDS

ESTIMATED WETLAND IMPACT

ESTIMATED SHADING IMPACT

NOTE: All Wetland Impact areas and quantities are estimated, utilizing a combination of aerial mapping, field survey data, preliminary design data and preliminary limits of construction of the project's proposed improvements.

See 'Estimated Impact Areas and Fill Quantities' Sheet 4 for Area and Fill Quantity data.

| ESTIMATED IMPACT QUANTITIES | | |
|-----------------------------|-------|----------------|
| IMPACT AREA | ACRES | FILL VOL. (CY) |
| 1 * | 0.563 | 1,133 |
| 2 | 0.052 | N/A ** |
| 3 | 0.184 | 356 |
| 4 | 0.039 | 8 |
| 5 | 0.774 | 5,300 |
| 6 | 0.015 | 93 |
| 7 | 0.047 | 297 |
| 8 | 0.002 | 10 |
| 9 | 0.016 | 130 |
| 10 | 2.586 | 8,069 |
| 11 | 1.321 | 9,151 |
| 12 | 0.618 | 4,752 |
| 13 | 0.363 | N/A ** |
| 14 | 0.296 | N/A ** |

* Impact areas are listed by number in their approximate order from north to south through the project.

** Shading Impact Area.

| ESTIMATED IMPACT QUANTITIES | | |
|-----------------------------|---------------|----------------|
| IMPACT AREA | ACRES | FILL VOL. (CY) |
| 15 | 0.204 | 1,000 |
| 16 | 0.966 | 5,260 |
| 17 | 0.038 | 812 |
| 18 | 0.003 | 8 |
| 19 | 0.157 | N/A ** |
| 20 | 0.134 | 700 |
| 21 | 0.377 | N/A ** |
| 22 | 0.019 | N/A ** |
| 23 | 0.040 | N/A ** |
| 24 | 0.041 | 455 |
| 25 | 0.016 | 177 |
| 26 | 0.761 | 7,943 |
| 27 | 0.431 | N/A ** |
| TOTAL | 10.063 | 45,654 |

*** These 'Estimated Impact Areas and Fill Quantities' Exhibits 1-4 do not include graphics or quantity data for temporary construction impact areas.

NOTE: All Wetland Impact areas and quantities are estimated, utilizing a combination of aerial mapping, field survey data, preliminary design data and preliminary limits of construction of the project's proposed improvements.

See 'Estimated Impact Areas and Fill Quantities' Shts. 1 - 3 for Impact Area Shapes & Designations



Navy Base Intermodal Facility

September 2015



Estimated Impact Areas and Fill Quantities

Sheet 4 of 4

NAVY BASE ICTF PROJECT

ANALYSIS AND INFORMATION

This document is prepared and submitted pursuant the permitting jurisdiction of the Department of the Army, U.S. Army Corps of Engineers (USACE or Corps) under Section 404 of the Clean Water Act (CWA) and certain requirements set forth under the National Environmental Policy Act, 42 U.S.C.A. §§ 4321 *et seq.* (NEPA). Palmetto Railways, a division of the South Carolina Department of Commerce (Palmetto Railways), will submit an application for the Navy Base Intermodal Container Transfer Facility (Navy Base ICTF) (the “Proposed Project”) and this analysis is drafted to aid and assist compliance with the guidelines promulgated by the United States Environmental Protection Agency (USEPA) in conjunction with the Secretary of the Army under the authority of Section 404(b)(1) of the Clean Water Act (Guidelines)¹ and NEPA.

1.0 Proposed Project

Palmetto Railways proposes to build and operate a near-dock, equal access intermodal container transfer facility and supporting track in the Charleston region to facilitate the movement of goods and commerce over rail. The Proposed Project would result in an impact on the environment and involve discharge of dredge and fill material into waters of the United States. Section 404 of the CWA establishes a regulatory program to regulate the discharge of dredge and fill material into waters of the United States, including wetlands, through issuance of Department of Army (DA) permits.

The Proposed Project consists of six elements:

- Northern Rail Connection;
- Southern Rail Connection;
- Cosgrove McMillan Overpass;
- Intermodal Container Transfer Facility (ICTF);
- Hobson/Bainbridge Realignment & Viaduct Removal; and
- Private Drayage Road Elements.

1.1 The USACE Authority and Scope of Analysis

1.1.1 Section 404 of the Clean Water Act

Palmetto Railways understands that the Proposed Project is subject to the jurisdiction of the USACE under Section 404 of the CWA based on the contemplated placement and discharge of dredged or fill material into navigable waters and/or wetlands of the United States. The USACE administers the Section 404 program on behalf of the Secretary of the Army. The USEPA has the authority to determine the scope of Section 404 jurisdiction, has issued Guidelines on the discharge

¹ 40 C.F.R. Part 230.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

of dredged or fill material, and will generally prohibit a discharge if it determines under Section 404 that a discharge will result in unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas. The USEPA can exercise its Section 404(c) authority to veto the issuance of a Section 404 Permit of the USACE.

The USACE's review of the Proposed Project includes a determination of compliance with the Guidelines contained in 40 C.F.R. Part 230, including review of four specific requirements:

- **40 C.F.R. § 230.10(a):** An evaluation of alternatives to the Proposed Project to determine whether there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem than of the Proposed Project, so long as the alternative does not have other significant adverse environmental consequences. The alternative identified by this test is referred to as the *least environmentally damaging practicable alternative*, or the LEDPA.
- **40 C.F.R. § 230.10(b):** Whether the discharge would violate any applicable state water quality standards, Section 307 of the CWA, the Endangered Species Act (ESA), or federal laws concerning marine sanctuaries.
- **40 C.F.R. § 230.10(c):** Whether the discharge would cause or contribute to significant degradation of waters of the United States.
- **40 C.F.R. § 230.10(d):** Whether appropriate and practicable steps have been taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.

Evaluation of a proposed project under all four of the requirements set forth in the Guidelines constitutes a determination of compliance with the Section 404(b)(1).

The Corps' regulations also address the relationship between the Corps and state and local land use planning agencies. The regulations expressly state that "the primary responsibility for determining zoning and local land use matters rest with state and local and tribal authorities." 33 C.F.R. § 320.4(j)(2). The regulations direct that upon compliance with the Corps' rules and other applicable federal law, in the absence of "overriding national factors of the public interest" that may be revealed during a permit application, a permit "will be generally issued following receipt of a favorable state determination" 33 C.F.R. § 320.4(j)(4). While making a compliance determination, the Corps may gather information sufficient to support and make its decisions by soliciting comments from other federal, tribal, state, and local resource agencies and the public. Notwithstanding, the Corps is solely responsible for reaching a decision on the merits of the permit application, including determination of the project purpose, the extent of the alternatives analysis, which alternatives are practicable, the LEDPA, the amount and type of mitigation that is to be required, and all other aspects of the decision-making process.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

1.1.2 National Environmental Policy Act

Because the required permit authorization from the USACE is a major federal action, the USACE must either prepare an Environmental Assessment for a determination of the significance of the environmental impacts or conduct an Environmental Impact Statement pursuant to the National Environmental Policy Act (NEPA).

According to the Guidelines, the alternatives analysis required in a NEPA evaluation is similar to that conducted under the Section 404(b)(1):

For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines.

40 C.F.R. § 230.10(a)(4). Additionally, USACE program literature has recognized that “Districts should not conduct or document separate alternatives analyses for NEPA and the 404(b)(1) Guidelines.” *See* USACE, *Standard Operating Procedures for the USACE’s Regulatory Program* (July 2009) (USACE SOP).

To meet the requirements of the Guidelines under the USACE’s regulatory program, as well as satisfy the alternative requirements under NEPA, alternatives were developed to incorporate the LEDPA, and no additional alternatives are necessary as part of the USACE’s Guidelines evaluation process of the Proposed Project.

1.3 Practicable Alternatives Framework (40 C.F.R. § 230.10 (a))

As Palmetto Railways understands it, the USACE’s analysis of practicable alternatives is found in the Guidelines. The first requirement of the Guidelines provides:

(a) Except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

(1) For the purpose of this requirement, practicable alternatives include, but are not limited to:

(i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

(ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;

(2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered.

(3) Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in subpart E) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not “water dependent”), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

1.4 40 C.F.R. § 230.10(a).

Palmetto Railways understands that the Guidelines prohibit the discharge of dredged or fill material in a special aquatic site unless it can be shown that there are is no practicable alternative which would have less adverse impact on the aquatic ecosystem. A practicable alternative is subject to reasonable interpretation; however, the Guidelines generally define a practicable alternative as one that is “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” 40 C.F.R. § 230.10(a)(2).

Under subsection (a)(3), an initial determination must be made by the USACE with respect to whether the proposed discharges are “water dependent.” The Guidelines provide that, when an activity associated with the discharge of dredged or fill material in a special aquatic site does not require access or proximity to that special aquatic site to fulfill its basic purpose, the activity is not “water dependent.”

2.0 Palmetto Railways’ Purpose and Need

Palmetto Railways respectfully submits that the purpose of the Proposed Project is to locate, build, and operate a state-of-the-art intermodal container transfer facility serving the Port of Charleston

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

with near-dock, equal access for the two Class I rail carriers serving the area (*i.e.*, CSX Transportation (CSX) and Norfolk Southern Railways (NS)) to meet future demand in the Charleston region to facilitate the movement of goods and commerce over rail, thus stimulating and supporting economic development within the region and providing and maintaining connections to key regional and national transportation corridors.

An ICTF places significant emphasis on locating the facility at a site that can take advantage of close proximity and availability of adequate transportation infrastructure, including roads and seaport facilities in South Carolina. Another crucial factor is the accessibility for operations from a logistical perspective, such as entry and exit into the facility by each rail line. The intermodal facility will consist of, among other things, grade-separated and at-grade access roads, support tracks, an office building, maintenance building and area, container handling and storage areas, equipment areas and gate infrastructure, and parking areas.

Near-dock rail facilities, like the Proposed Project, serve marine container terminals and South Carolina Ports Authority clients and, thereby, provide certain logistical advantages over on-dock facilities. A near-dock equal access rail facility reduces the use of truck cargo transport to and from separate rail yards in the region, thereby minimizing undesirable air quality, noise, and traffic impacts. Moreover, increased cargo projections over rail cannot be adequately handled with the existing rail terminal infrastructure in the Charleston region. Therefore, the Proposed Project is an essential component of the continued economic growth of the Charleston region through the facilitation of improved efficiencies in intermodal transportation and Class 1 railroad accessibility.

Therefore, Palmetto Railways respectfully submits that the overall purpose of the Proposed Project is:

To build and operate a near-dock, equal access intermodal container transfer facility at the former Charleston Navy Base in South Carolina on a property that has sufficient acreage, sufficient interstate highway access, is centralized to the various marine terminals with deep water access, and is sufficiently close to existing Class 1 railroad tracks to allow for reasonable access between the ICTF and the existing Class 1 rail tracks.

3.0 Alternatives Development

Based on the requirements imposed under NEPA, regulations developed by the CEQ, and the USACE, Palmetto Railways initially considered all available alternatives for the Proposed Project.²

² The NEPA alternatives analysis requires consideration of all alternatives for a project has its roots in the fact that NEPA is a procedural statute, rather than one dictating substantive analysis or mandating a particular outcome. At its core, NEPA is a “stop, look, and listen” statute that is intended to result in an

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

Through the process of developing the purpose and need, Palmetto Railways applied the basic project concepts to the full array of available alternatives in order to guide the identification of a “reasonable range” of alternatives as required by NEPA. Under NEPA, reasonable alternatives include those that are practical or feasible from a technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant. 46 Fed. Reg. 18026 (March 23, 1981).

In identifying and developing this list of alternatives,³ Palmetto Railways considered and included alternatives falling within the following categories:

- The proposed alternative;
- Alternatives that would involve no discharges of dredged or fill material into the waters of the United States (such as the “no action” alternative);
- Alternative locations, including those that might involve less adverse impact to waters of the United States, including modifications to the alignments, site layouts, or design options in the physical layout and operation of the project to reduce the amount of impacts to the waters of the United States; and
- Alternatives that would involve greater adverse impact to waters of the United States but avoid or minimize other significant adverse environmental consequences.

The range of potential reasonable alternatives that was considered also included alternative sites and alternative project configurations. The range of reasonable alternatives identified in the initial NEPA analysis (through application of the above purpose and need to the full panoply of alternatives) screened out unreasonable alternatives resulting in the reasonable alternatives addressed in the Level 1 analysis.

In addition to meeting the initial “reasonability” requirement under NEPA, the Guidelines impose further restrictions and deliberation on practicability considerations related to the range of reasonable alternatives. Under the Guidelines, the USACE typically only considers those alternatives

informed agency decision making process. The Guidelines impose a stricter, substantive standard to the range of reasonable alternatives identified under NEPA that is designed to arrive at a practicable alternative that has the least adverse impact on the aquatic ecosystem.

³ This analysis considers a range of alternatives which might enhance environmental quality or have a less detrimental effect on the environment than the proposed activity and demonstrates that there is no *feasible* and *prudent* alternative that will have a less environmentally damaging effect. An alternative is *feasible* if it is available and consistent with sound engineering principles, such that the alternative can be successfully constructed or implemented. An alternative is *prudent* if it is economically reasonable in light of the benefits the activity would provide, but cost alone does not render an alternative imprudent.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

that are available to the applicant and meet the overall purpose.⁴ In support of the identified alternatives, Palmetto Railways is providing documentation that demonstrates that the proposed location is necessary with the least environmentally damaging design and will take place in the least environmentally damaging location.

Once the appropriate range of reasonable alternatives is identified, the practicability analysis of the project alternatives is conducted in two levels:

1. Level 1 Analysis is a refined screening process employed to evaluate certain identified reasonable alternatives with respect to consistency with the Proposed Project's purpose and need, as defined by Palmetto Railways, as well as the overall project purpose, as defined by the USACE.
2. Level 2 Analysis reviews those alternatives that survive Level 1 Analysis and employs the more rigorous practicability standards under the Guidelines, including:
 - a. Availability;
 - b. Cost;
 - c. Technological considerations, including the state of existing technology to be utilized for the project;
 - d. Logistical considerations, including infrastructure assessments and requirements; and
 - e. Environmental, social, historical, and cultural impacts.

The goal of Level 2 Analysis is to identify the proposed site location of the Proposed Project.

⁴ See 40 C.F.R. § 230.10(a)(2) ("If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity may be considered."). By contrast, a NEPA analysis often requires consideration of alternatives that are not available to the applicant. See USACE SOP. The alternatives analysis undertaken by Palmetto Railways satisfies the requirements of both the Guidelines and NEPA alternatives analyses.

NAVY BASE ICTF PROJECT

ANALYSIS AND INFORMATION

4.0 Identification of Alternatives

4.1 Proposed Project Criteria

There are certain criteria necessary to meet the operational requirements for an intermodal container transfer facility. In this situation, meeting the operational site requirements for the project necessitates careful consideration of (1) rail accessibility requirements by the two Class 1 railroads to ensure equal access, (2) proximity to the interstate to ensure ease of access for truck drays from certain marine terminals and other distribution and logistical centers providing rail cargo for transport through the Class 1 railroads or through the Port of Charleston, (3) close proximity to a marine container terminal to provide near-dock rail service, and (4) sufficient land availability. The Proposed Project requires, at a minimum, a site that meets the following characteristics and criteria:

- 90 acres of available and developable land for the ICTF;
- Access to an interstate highway;
- Equal access for both Class 1 railroads serving South Carolina (CSX and NS) and centrally located for effective rail movements with connections to existing rail lines for both Class 1 railroads; and
- Located close enough to a marine container terminal with deep water access to provide near-dock service and also be centrally located for convenient access for all marine container terminals.

The marine transportation system (MTS) does not consist only of waterways, ports, and terminals but also includes intermodal connections – namely inland rail and roadway that allow cargo to be transferred between transportation modes to reach and depart from marine facilities.⁵ “Shoreside infrastructure planning, investments, and waterfront development ... ensure[s] that access to ports and waterways is sufficient to sustain the current and projected traffic and operation of the ports, while ensuring the protection of the environment.”⁶ However, inefficiencies in intermodal connections between transportation modes can disrupt the total MTS system, reducing productivity and profitability for transport providers, imposing additional costs to the distribution system, and ultimately adding costs for shippers and consumers.⁷ In order to promote transportation cost savings, the intermodal connections must maximize throughput and minimize transloading

⁵ U.S. Dep’t of Transp., *An Assessment of the U.S. Marine Transportation System: A Report to Congress*, at 6, 11, 64 (1999) (USDOT 1999).

⁶ *Id.* at 64. See also AECOM, Corp., *Western Va. Intermodal Facility: Econ. & Transp. Impacts Study, Final Report* 79 (Submitted to: Roanoke Valley-Alleghany Reg’l Comm’n July 2015) (“Regions that have put [intermodal] infrastructure in place are in better positions to attract businesses and developments....”).

⁷ USDOT 1999 at 51-52.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

times and costs.⁸ For these reasons, “[t]he adequate development and maintenance of the intermodal connections – roadways and railroads – is a particularly crucial capacity consideration for the MTS.... *Good intermodal access is a prerequisite to support the growing demand on the MTS.*”⁹

According to the National Cooperative Freight Research Program (NCFRP), proximity and access to markets, especially supply chain networks, is the single most important factor in determining the location of a freight facility.¹⁰ Access is expected to provide delivery service that meets or exceeds the competitive standards in the market and costs that are as low as possible.¹¹ This requires intermodal facilities to be sited in locations that permit direct and efficient access to points of origin or destination, including seaports where large volumes of freight are generated.¹² Freight facilities need to be efficiently connected to the transportation network and to ports of entry to consumers by locating intermodal facilities where they can easily access major transportation channels such as highways, interstates, seaports, and/or airports.¹³ Proper site selection is therefore imperative to ensuring the availability of intermodal connections and the realization of potential economic and efficiency gains from an ICTF.

When siting an intermodal facility, a location planning team must identify a parcel of land with the appropriate size and configuration that conforms with the anticipated facility operational needs at reasonable cost.¹⁴ A proposed ICTF location must be of sufficient size and shape to

⁸ *Id.* at 52.

⁹ *Id.* at 51 (emphasis added). *See also* James V. Selna, *Containerization and Intermodal Service in Ocean Shipping*, 21 Stan. L. Rev. 1077, 1090 (1969) (“Intermodal service offers the shipper both internal savings and procedural simplification ... The combination of containerization and intermodal service creates a reinforcing effect and provides savings and service options....”).

¹⁰ National Cooperative Freight Research Program, Report 13 - Freight Facility Location Selection: A Guide for Public Officials, at 39, 54 (NCFRP Report 13).

¹¹ NCFRP Report 13, at 40.

¹² NCFRP Report 13 at 40-41; *see also id.* at 42 (highlighting the advantages of the Rickenbacker Intermodal Facility location, including proximity to major highways and interstates and an international airport).

¹³ NCFRP Report 13 at 10, 43. Intermodal facilities that include truck traffic should be sited within a quarter mile of a major highway or interstate, as this will create major cost savings, even relative to a site a mere two miles away from such major highway or interstate. *Id.* at 44. Similarly, those intermodal facilities that host rail should be sited where efficient access to the rail transportation network exists. *Id.* at 45.

¹⁴ NCFRP Report 13 at 37, 49; *see also* U.S. Army Corps of Eng’rs, Mobile Dist., *Final Envtl. Impact Stmt. for Choctaw Point Terminal Project Mobile, Ala.* 35 (Aug. 2004) (listing availability of sufficient land as site selection criteria for port and adjacent intermodal rail yard development); W. Va. Dep’t of Transp. *et al.*, *Prichard Intermodal Development Site Envtl. Assessment*, at 3 (Submitted to: U.S. Dep’t of Transp., Fed. Highway Admin. Oct. 4, 2011; FONSI issued Jan. 5, 2012) (evaluating potential intermodal facility sites based on highway access, rail access, and general site characteristics).

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

accommodate essential ICTF operations.¹⁵ In order to satisfy the physical dimensions of and horizontal and vertical requirements for freight railroads, an ICTF footprint must be a contiguous tract of land with sufficient acreage to house, among other things:

- (1) lead tracks entering and exiting the facility;
- (2) support/storage tracks and working tracks for loading and unloading freight containers;
- (3) container stacking and transfer area
- (4) container and chassis maintenance area;
- (5) paved areas that can accommodate wheeled vehicle and employee parking;
- (6) operations and maintenance buildings, including a check-in/check-out gate(s) and administrative canopy(ies);
- (7) lighting and security features; and
- (8) areas for storm water management.¹⁶

Certain geographical characteristics are also essential in determining site feasibility.¹⁷ Trains servicing intermodal facilities can stretch thousands of feet in length. Therefore, a proposed ICTF site should be long, linear, flat, and contiguous and must have sufficient track length to facilitate efficient train movement, internal truck traffic circulation, and cargo handling between rail and truck.¹⁸ Moreover, an ICTF footprint must also have sufficient width to accommodate a series of

¹⁵ See Dr. Jean-Paul Rodrigue, THE GEOGRAPHY OF TRANSP. SYS., CONFIGURATION OF A RAIL INTERMODAL CONTAINER TERMINAL, Dep't of Global Studies & Geography, Hofstra Univ., <https://people.hofstra.edu/geotrans/eng/ch4en/conc4en/railterminal.html> (last visited Oct. 12, 2015) (detailing general operations and configuration for a rail intermodal container terminal).

¹⁶ *Id.*; see also Port of Los Angeles, Rail & Intermodal Yards, https://www.portoflosangeles.org/facilities/rail_intermodal_yards.asp (last visited Oct. 11, 2015) (listing features of the Port of Los Angeles near-dock ICTF).

¹⁷ The RNO Group, LLC *et al*, *Final Report, Stmt. of Feasibility & Feasibility Report, Multi-Modal Freight Transfer Facility & Mfg. Ctr. Study*, at A-7 (Submitted to: S. Tier W. Reg'l Planning & Dev. Bd., Ctr. for Reg'l Excellence, Salamanca, NY Dec. 2007) (noting that the proposed site of an intermodal facility was ideal based on, among other things, its linear characteristics, available trackage, location within the catchment market, adjacent land, direct access to other rail lines, and other site selection factors); W. Va. Dep't of Transp. *supra* note 10 (evaluating general site characteristics of potential intermodal facility locations).

¹⁸ See Rodrigue *supra* note 15 (recognizing that the interaction of rail track operations, storage yard operations, and gate operations should be taken into account when configuring an intermodal facility); see also The RNO Group, LLC *supra* note 14 at A-7 (citing the importance of linear characteristics in intermodal facility site selection); Dr. Tulio Sulbaran, *et al*, *Final Report, Triple Bottom Line Assessment of Future Miss.*

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

parallel track storage areas.¹⁹ Although the size of an intermodal facility depends primarily on the volume of freight that passes through the facility and other related factors, the average size of an intermodal facility in the United States is approximately 100 acres.²⁰

Connecting the ICTF with an efficient transportation network is also a key criterion when evaluating potential intermodal facility locations.²¹ Intermodal facilities require efficiencies in the transfer of goods from one mode of transportation to another and, for this reason, are typically located near key transportation channels such as major highways and interstates for efficient overland truck access.²² Major highways optimize the movement of intermodal truck traffic and allow for effective truck ingress and egress to the intermodal facility. Conversely, roadways of lower functional classification have lower speeds, generally require vehicles to negotiate multiple traffic control devices and include other physical limitations not conducive to safe truck movement.

Additionally, the purpose of an ICTF is to accommodate the cost-effective transfer of containers and freight between ship, rail, and truck modes of transportation.²³ There is increased pressure to facilitate and expedite the transfer of shipments between freight conveyances, such as from vessels to railroads or trucks.²⁴ As well, facilities that promote the use of modes other than

Intermodal Facility, Study No. 235, Univ. of S. Miss., at 29 (prepared For: Miss. Dep't of Transp. Jun. 2013) (citing an intermodal facility case study and noting that site acreage needed to be flat or gently rolling, minimally developed land that allowed for continuous track contiguous to the mainline).

¹⁹ See Rodrigue *supra* note 15.

²⁰ Dr. Tulio Sulbaran *supra* note 18 at 31.

²¹ NCFRP Report 13 at 39, 54; *see also* W. Va. Dep't of Transp. *supra* note 10, at 4 (evaluating potential intermodal facility locations based on access and proximity to interstates and highways); U.S. Army Corps of Eng'rs, Mobile Dist. *supra* note 10 (listing as site selection criteria for port and adjacent intermodal rail yard development: close proximity to rail, interstate highways, and local road access); AECOM, Corp. *supra* note 2, at 79 ("With the Western Virginia Intermodal Facility's location on two rail mainlines and one Interstate, the site is well situated for an intermodal facility").

²² NCFRP Report 13 at 37, 43-44; The RNO Group, LLC *supra* note 14, at 7 (noting proximity to interstate highways when evaluating the feasibility of a proposed intermodal facility site); TranSystems Corp., *Final Report, Salinas Valley Truck to Rail Intermodal Facility Feasibility Study*, at 3 (Submitted to: Ass'n of Monterey Bay Area Gov'ts Aug. 19, 2011) (listing ease of access to major roadways as a key criterion for determining the best site for a proposed truck-rail intermodal facility); Kevin M. Anderson & C. Michael Walton, *Evaluating Intermodal Freight Terminals: A Framework for Gov't Participation*, Ctr. For Transp. Research, Univ. of Tex. at Austin, Report No. SWUTC/98/467505-1, at 16 (Sponsoring Agency: Sw. Region Univ. Transp. Ctr., Tex. Transp. Inst., Tex. A&M Univ. Sys.) (Aug. 1998) (noting that access to highway networks is critical to the efficiency of intermodal rail facilities); Richard D. Stewart, Ph.D., *et al*, *Twin Ports Intermodal Freight Terminal Study*, Midwest Reg'l Univ. Transp. Ctr., Coll. of Eng'g, Univ. of Wis.-Madison, U.S. Dep't of Transp., at 65 (Jul. 15, 2003) (listing access to interstate highways as criterion when evaluating potential intermodal rail terminal locations).

²³ *See id.* at 7 (defining the purpose of intermodal terminals generally).

²⁴ USDOT 1999 at 29-30.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

truck may help keep longer distance trips on more efficient and cost-effective modes.²⁵ For this reason, intermodal facilities should be located in an area that permits trains ease of access between existing mainline tracks and the facility.²⁶ Moreover, ease of rail access makes the intermodal facility more attractive for industrial and economic development.²⁷

Since the 1980s, the growth in the size of container ships coupled with industry deregulation has fostered intense competition in multimodal operations.²⁸ “[T]ime to market and overall logistics costs are prime factors driving freight facility location decisions. As a result, the first stage for locating a freight facility is to examine the interplay between location and freight costs.”²⁹ Therefore, port cities and terminal operators must offer rail and truck intermodal facilities that provide efficient interface between vessels and inland transportation at minimal cost to remain competitive in the containerized cargo market.³⁰

The intermodal facilities also must be in close proximity to the Proposed Project to function in a cost-effective manner and to produce enough transportation cost savings to attract existing and future container shipments.³¹ From a cost perspective, drayage services may account for up to 40% of total shipping cost, and this cost increases sharply if rail facilities are not located near points of origin or destination.³² Locating an intermodal facility in close proximity to an intermediate point of origin or destination for the movement of goods, like a seaport, is meant to achieve competitive delivery service with speed, predictability and precision at the lowest cost possible.³³ Studies have also shown that ports with on-dock or near-dock³⁴ rail service tend to have reduced container dwell

²⁵ NCFRP Report 13 at 15

²⁶ TranSystems Corp. *supra* note 19, at 5 (listing rail proximity as a key criterion for determining the best site for a proposed truck-rail intermodal facility); Richard D. Stewart *supra* note 19 at 66 (listing access to Class 1 rail lines with minimal rail line switching as criterion when evaluating potential intermodal rail terminal locations); W. Va. Dep’t of Transp. *supra* note 10, at 3 (assessing potential intermodal facility locations based on rail access, among other things); AECOM, Corp. *supra* note 4, at 79 (noting with approval location on rail mainline when assessing intermodal facility location).

²⁷ W. Va. Dep’t of Transp. *supra* note 10 at 6.

²⁸ See Richard W. Palmer Frank, *Terminal Operations and Multimodal Carriage: History and Prognosis*, 64 Tul. L. Rev. 281, 299 (1989).

²⁹ *Id.* at 34.

³⁰ Richard W. Palmer Frank *supra* note 34.

³¹ U.S. Army Corps of Eng’rs, Mobile Dist. *supra* note 10 at 19.

³² Kevin M. Anderson *supra* note 23 at 10, 37; see also NCFRP Report 13 (“Time to market and overall logistics costs are prime factors driving freight facility location decisions.”).

³³ *Id.* at 40.

³⁴ On-dock (or on-terminal) means an intermodal railyard located on the terminal site, within the terminal boundary. Near-dock means an intermodal railyard outside the terminal boundary that is either contiguous or in a satellite location that requires travel on public roads. Affidavit of James R. Brennan, ¶9,

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

times, or times in which containers remain in the intermodal facility after vessel offloading.³⁵ Reduced dwell-times improves the storage area of intermodal facilities and enables ports to offload more containers, thereby enabling them to better utilize terminal capacity.³⁶ Thus, a near-dock ICTF offers distinct economic advantages to shippers³⁷ that are necessary in today's ultra-competitive marketplace.³⁸

5.0 Range of Alternatives

The goal of providing a list of alternatives that meet the above needs is twofold: (1) to disclose and evaluate potential environmental impacts that may result from the proposed project and retained alternatives; and (2) to evaluate the proposed alternative's ability to fulfill the project purpose and need consistent with criteria provided. Palmetto Railways arrived at its proposed alternative after conducting stages of increasingly thorough analysis, while balancing the environmental impacts with economic, technological, and logistical concerns.

The following list provides the range of reasonable alternatives identified by Palmetto Railways for consideration for the location of an ICTF, along with a short, descriptive identification of the alternative:

5.1 No-Action

The Proposed Project is not constructed.

S.C. Coastal Conservation League v. U.S. Army Corps of Eng'rs, C/A 2:07-cv-03802-CWH (D.S.C.), dated Aug. 17, 2009.

³⁵ U.S. Department of Transp., *The Impacts of Changes in Ship Design on Transportation Infrastructure and Operations*, at 16 ("USDOT 1998").

³⁶ USDOT 1998, at 16.

³⁷ When selecting a container port, shippers weigh, among other things, the availability of intermodal service to interior points (cost, transit time, and transit reliability), as well as the cost of drayage trucking from marine terminals. Cambridge Systematics, Inc., *Fla. Intermodal Logistics Ctr. Forum: Int'l Supply Chains & Intermodal Logistics Ctrs.* (February 20, 2013) http://www.freightmovesflorida.com/docs/default-source/ilcforumpresentations/p2_isbell.pdf?sfvrsn=2 (last visited Oct. 13, 2015). One of the key lessons learned from observing other intermodal facilities is that they are typically co-located adjacent to seaports (or other major transportation channels depending on the purpose of the facility) to reduce the transfer cost between each transportation mode. *Id.*

³⁸ Based on these trends, other port cities have already made substantial investments in near- or on-dock ICTFs. *Id.* at 300 (noting that Seattle, Tacoma, Portland, San Francisco, Los Angeles/Long Beach, and Baltimore have all made substantial investments in near-dock ICTFs).

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

5.2 Macalloy/Cooper Yard

The Macalloy site was identified as a potential opportunity for additional intermodal capacity to be created for CSX intermodal. The Macalloy/Cooper Yard site is approximately 130 acres, with portions of the property already devoted to industrial activity. This site is a remediated CERCLA property. This site is located east of Spruill Avenue and north of Cherry Hill Lane. In the expanded phase it would encompass what is currently Cooper Yard owned by CSX which runs parallel to Spruill Avenue.

The plans identified in the 2008 S.C. State Rail Plan Update only identified access to this site for CSX. In later iterations of the concept development, dual access to CSX and NS was proposed for this site with separate gate and track facilities for each. Both of these facilities were planned to utilize conventional lift equipment and then be phased into a wide-span gantry crane model.

The Macalloy site does not offer “equal” access to NS because they would have to create new right of way or acquire trackage rights over Palmetto Railways property or CSX property. It also creates other surface transportation issues with at grade crossings for arriving and departing trains as well as switching activities.

The owner of the Macalloy site has submitted a permit application to the Corps to develop the site as a private marine terminal.

5.3 Charleston Naval Complex – Clemson Tract

This site referred to as the Clemson Tract which has become Palmetto Railways proposed project is approximately 115 acres. It is located just east of North Hobson Avenue between what is now Viaduct Road and McMillan Avenue. The site configuration extends through the Viaduct Road bridge.

This site offers equal dual access to both Class 1 rail carriers with Norfolk Southern arriving from the north through an existing interchange and CSX arriving from the south connecting at their existing Cooper Yard.

The lift operations are planned to utilize wide-span gantry cranes from inception of the facility. This facility will be able to arrive and depart a 10,000 foot train from each rail carrier with no at grade crossings being impacted during arrival and departure and switching activities on its site. A private drayage road is proposed to connect to the under-construction Navy Base Container Terminal to allow transport of containers without accessing public roadways and provide near-dock capability to the Navy Base Container Terminal.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

5.4 Charleston Naval Complex – River Center

The site known as the River Center was formerly known as the Noisette site in the 2008 S.C. State Rail Plan Update. Currently, the site is approximately 100 acres, with the capability of expansion through the acquisition of adjoining property. It is located just west of Noisette Boulevard and south of Noisette Creek. The site would extend through what is currently McMillan Avenue.

The intermodal operations for this site would mimic those of the Clemson site as the proposed layout is basically a mirror image of the Clemson site. The northern lead would only act as the interchange to Norfolk Southern and the southern lead would act as arrival and departure tracks, as well as the location of all switching activities. This alternative requires another bridge to the drayage road as well as an additional approximately 5,000 feet beyond the requirements of the Clemson site, which would increase the cost and decrease operational efficiencies.

The impacts to the local traffic patterns for this alternative are greater than those of any other alternative due to its elimination of a centralized ingress/egress for the existing businesses and homes located on the former Navy Base as the south end of the facility and southern lead extend through McMillan Avenue and Cosgrove Avenue. The road alignments would require significant and costly engineering to construct a grade separation at this location, if feasible at all. All vehicular traffic would have to enter and exit the base from the south over Viaduct Road and the north from Virginia Avenue.

5.5 Naval Weapons Station

A site at the former Naval Weapons Station that has some existing trackage was identified in the 2008 S.C. State Rail Plan Update. This site is located near Remount and Red Bank Roads and the North Rhett Avenue Extension. The parcel includes no less than 120 acres. The construction of an intermodal yard and additional supporting track would require acquisition of property from the United States government, which would have to be done through a voluntary transfer or otherwise mandated by Congress as Palmetto Railways lacks the authority to condemn the property of the United States government.

Additionally, the site includes significant amounts of wetlands and impacts to other aquatic resources. The Naval Weapons Station site does not offer “equal” access to Norfolk Southern because they would have to create new right of way or acquire trackage rights over CSX property. It also creates other surface transportation issues with at grade crossings for arriving and departing trains as well as switching activities and creates significant logistical concerns.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

6.0 Alternatives Analysis

6.1 Level 1 Analysis

Level 1 of the alternatives analysis evaluates the range of reasonable alternatives for their ability to best satisfy the purpose and need criteria of the Proposed Project. This step of the analysis is intended to identify on a macro level which of the alternatives might reasonably meet the purpose and need, and those alternatives that clearly do not meet the requisite criteria were not considered further within this analysis.

For Level 1 screening, areas in the Charleston region previously identified in the South Carolina State Rail Plan 2008 Update as potential locations for an ICTF were evaluated. Each of the sites was assessed with respect to the relevant characteristics.

The Level 1 screening identified four potential alternative locations. These sites were assessed with respect to the size,³⁹ highway access, rail access, marine terminal access, and general site characteristics. As a result of the Level 1 analysis, certain of the identified alternatives were eliminated as not reasonably being able to fulfill the purpose and need of the Proposed Project. These alternatives include the Macalloy/Cooper Yard and Naval Weapons Station. Development challenges included difficult or inadequate access to highway facilities; distance from existing Class 1 trackage and accessibility; proximity to a marine container terminal; and available acreage.

| Alternatives | | Minimum of 90 acres | Nearby interstate access | Located in near-dock proximity to a container terminal | Equal accessibility to both existing Class 1 rail networks |
|--------------|---|---------------------|--------------------------|--|--|
| A. | No Action (No Build) | ○ | ○ | ○ | ○ |
| B. | Macalloy/Cooper Yard | ● | ● | ● | ○ |
| C. | Charleston Naval Complex - Hobson | ● | ● | ● | ● |
| D. | Charleston Naval Complex - River Center | ● | ● | ● | ● |
| E. | Naval Weapons Station | ● | ○ | Ø | ○ |

- = passes criterion
- = fails criterion
- Ø = partially passes criterion

³⁹ Here, based on a proposed throughput of no less than 1.2 million Twenty Foot Equivalent Units (TEUs), or no less than approximately 780,000 containers, considering dwell times, operational space requirements, and ancillary space requirements (e.g., stormwater retention), an ICTF needs to be no less than 90 acres and not less than 100 acres would provide additional operational and logistical benefits.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

6.2 Level 2 Analysis

The Level 2 analysis evaluates the two remaining site locations and the no action alternative in greater detail and compares quantitative and qualitative factors to determine which location and routing within the alternative provides the least environmentally damaging practicable alternative and meets the overall project purpose.

The No Action alternative means either no permit is to be required or that a permit is to be denied. In this specific case, Palmetto Railways submits that it is not possible to entirely avoid wetland impacts and meet the overall project purpose. Therefore, the No Action alternative would be equivalent to permit denial. Permit denial would meet the overall project purpose *only if* there was another parcel available that could accommodate the proposed project with no wetland impacts and no other significant environmental impact or effect.

The No Action Alternative is retained as a baseline for evaluation of a Build Alternative. Under the No Action Alternative, existing conditions of the site would remain the same. The existing intermodal facilities for NS and CSX would require significant independent expenditures and expansions to accommodate and meet any future capacity needs which would likely result in adverse environmental impacts and less operational efficiencies. However, any expansion of the existing facilities will only meet short-term needs and will not meet the long-term capacity requirements of the region or the purpose and need. The No Action Alternative will not meet the project purpose and need.

The development plan for the ICTF footprint remains substantially the same regardless of location, and thus essentially the same processes (such as land acquisition, grading, utility infrastructure, roads, and other site preparation) will be undertaken for the ICTF regardless of whether the site is located on the Clemson or River Center tracts.

In analyzing the feasibility of an ICTF at these two locations, there was a further assessment of Class 1 equal access and rail network compatibility. To assess this key factor, varying trackage configurations entering and exiting the Clemson and River Center locations were evaluated for switching capability as well as viewed for logistical feasibility from the perspectives of Palmetto Railways, NS, and CSX.⁴⁰ For a northern connection between the existing Class 1 networks and the

⁴⁰ Note that in assessing logistical feasibility, one of the main concerns was trackage rights and access. Each of the railroads has certain existing trackage rights, and feasibility is based in large part on the ability move freight on one's own tracks. Despite being a State agency with general condemnation authority, Palmetto Railways lacks the authority to condemn or require trackage access from NS or CSX.

The Interstate Commerce Commission Termination Act (ICCTA) vests the Surface Transportation Board ("Board") with exclusive jurisdiction over the regulation of railroads. State attempts to condemn railroad property through eminent domain are a form of regulation, and thus, federally preempted where such action may prevent or unreasonably interfere with present or potential railroad operations. The ICCTA vested the Board with "exclusive" jurisdiction over the regulation of railroad transportation. *Union Pac. R.R.*

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

ICTF, two configurations were analyzed: (1) a route through the hospital district and (2) a route connecting to the existing “S-line”. For a southern connection between the existing Class 1 networks and the ICTF, two configurations were analyzed: (1) a route in close proximity to Kingsworth Avenue and (2) a route in close proximity to Milford Street. However, when examining rail accessibility for either or both Class 1 railroads across these configurations, certain operational constraints and considerations unique to the railroad, which in some instances eliminated certain trackage alternatives.

For example, the radius of a curve in the track should not be more than 10 degrees to allow for mainline engines and intermodal railcars to traverse safely around a curve. In the case of the multiple-well articulating intermodal railcars, they are much longer than a typical railcar and cannot traverse the tighter degree curves that other cars can even at the lower speeds that are seen in the city limits. With curves tighter than 10 degrees and longer railcars the possibility of derailments occurring grows exponentially. Palmetto Railways intends to construct the Navy Base ICTF utilizing 10 degree (or less) curves wherever possible to maximize the safety and maintenance of the facility.

Additionally, for example, traveling on a track paralleling Bexley Avenue towards the CSX Ashley Junction and Bennett Yards, there is a 15 degree curve coming onto the mainline. For intermodal cars to travel regularly to and from the Navy Base ICTF this curve would have to be softened. The curve currently runs through Rivers Avenue, and without realigning a major intersection and potentially taking businesses, this would not be feasible, conversely rendering a Bexley Avenue transit infeasible.

As another example, in examining the rail accessibility to the south, the “Milford” option has tracks running to the east of Cooper Yard while the “Kingsworth” option has tracks running west of Cooper Yard. The reason for this difference is to limit the interference of the arrival and departure of the intermodal trains with the current operations of Cooper Yard. The “Kingsworth” connection to the Navy Base ICTF lead would cause the shifting of existing track at Cooper Yard to the east in order to allow for the appropriate curvature at 10 degrees or less for its connection to the existing lines in the rail corridor between Meeting Street and King Street Extension. The “Milford” option provides a separation from the current switching and yard activities by keeping the track on the east side of Cooper Yard.

Co. v. Chi. Transit Auth., 647 F.3d 675, 678 (7th Cir. 2011). “Congress’s intent in the [ICCTA] to preempt state and local regulation of railroad transportation has been recognized as broad and sweeping.” *Id.* The South Carolina Supreme Court has recognized the broad and sweeping nature of the ICCTA’s preemption of state laws. *City of Cayce v. Norfolk S. Ry. Co.*, 391 S.C. 395, 403, 706 S.E.2d 6, 9 (2011) (“By its language, the ICCTA ‘broadly precludes state regulation of those matters [specified in 49 U.S.C.A. § 10501(b)].’”) (internal citation omitted). Courts have concluded that condemnation actions amount to “regulation” under the ICCTA. *See, e.g., Union Pac. R.R. Co.*, 647 F.3d at 679 (“A condemnation is a peculiar type of regulation”); *Wis. Cent. Ltd.*, 160 F. Supp. 2d at 1013-14 (condemnation is the “most extreme type of control” over rail transportation). Consequently, state condemnation actions are federally preempted where such actions “prevent[] or unreasonably interfere[] with railroad transportation.” *Union Pac. R.R. Co.*, 647 F.3d at 682.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

Each alternative was rank-ordered per criterion, the rank-orders summed, and an overall ranking assigned based on the scoring across the four criteria.

RAIL ACCESSIBILITY CRITERIA

| Alternative | Description | Switching at both ends | Logistical Feasibility for CSX | Logistical Feasibility for NS | Logistical Feasibility for PR | Sum of Rankings | Overall Ranking |
|-------------|-------------------------------|------------------------|--------------------------------|-------------------------------|-------------------------------|-----------------|-----------------|
| A | Clemson, hospital, Milford | 1 | 1 | 1 | 1 | 4 | 1 |
| B | Clemson, S-line NS, Milford | 3 | 7 | 7 | 5 | 22 | 4 |
| C | Clemson, both S-line | 6 | X* | 8 | 6 | X* | X* |
| D | Clemson, both hospital | 4 | X* | 3 | 3 | X* | X* |
| E | Clemson, both Milford | 5 | 5 | 9 | 4 | 23 | 5 |
| F | Clemson, hospital, Kingsworth | 2 | 2 | 2 | 2 | 8 | 2 |
| G | River, hospital, Milford | 7 | 3 | 4 | 7 | 21 | 3 |
| H | River, both hospital | 9 | X* | 6 | 9 | X* | X* |
| I | River, both Milford | 10 | 6 | 10 | 10 | 36 | 7 |
| J | River, hospital, Kingsworth | 8 | 4 | 5 | 8 | 25 | 6 |

Each alternative is rank-ordered 1 to 10 based on the ability of that alternative to meet the criteria against the other alternatives

*These are based on trackage and curvature of track that eliminates the ability of CSX to move intermodal trains through a northern route due to, among other things, the infeasibility of a Bexley Avenue transit

To further the alternatives analysis, the pertinent factors for each alternative are measured against each other in a weighted scoring system with the lowest score denoting the best alternative. These factors include:

- (1) Wetlands acreage. As the impetus for Corps' approval is a Section 404 permit, wetlands impacts play a key factor in any analysis. As a result, the multiple for the acreage is assigned the highest factor of 3 for point scoring purposes.
- (2) Rail Accessibility. After the impact on wetlands, the logistical feasibility and operational considerations are the most important criterion for and is assigned a scoring factor of 2.5. The rail accessibility rank-ordering above is utilized for this factor.
- (3) Historical Properties. A factor of 2 was given to the binary scoring of the question of whether historical properties are affected.
- (4) Rail Crossing Added. Public concerns have been expressed about rail crossings and wait times. To help assess that concern, the number of rail crossings for each proposed alternatives was weighted with a factor of 1.5.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

- (5) Rail Crossings Removed. To further assess the public concerns about rail crossings, the number removed was included, but this has no impact on the relative assessment as every alternative removes one rail crossing.
- (6) Properties Factor. Every alternative requires the acquisition of additional properties, which includes residential, commercial, and industrial. These properties have varying degrees of value and current use. To obtain an order of magnitude factor, a point score of 1 was issued for every 20 properties identified as needing to be acquired, as this would provide a general assessment of scale.

The table below summarizes the results of this scoring. Each point value in the analysis was multiplied by the factor and then added together. The resulting point tabulations provide a definitive ranking of the alternatives when compared to each other for these factors. To better show the magnitude of the comparison of alternatives, the final column uses the lowest score as the base and calculates the percentage increase over the best, lowest score.

NAVY BASE ICTF PROJECT ANALYSIS AND INFORMATION

| Alternative | Description | Acreage of Wetlands Impacted | Rail Accessibility Rank Ordering | Historical Properties Affected? (Yes=1, No=0) | Number of Additional Rail Crossings | Number of Removed Rail Crossings | Properties Factor (20 props. = 1 point) | Total Points | Factor (%) of Lowest Score |
|-------------|-------------------------------|------------------------------|----------------------------------|---|-------------------------------------|----------------------------------|---|--------------|----------------------------|
| A | Clemson, hospital, Milford | 10 063 | 1 | 1 | 2 | 1 | 3 | 38 689 | 100% |
| B | Clemson, S-line NS, Milford | 11 019 | 4 | 0 | 4 | 1 | 4 | 54 057 | 140% |
| C | Clemson, both S-line | 10 571 | 10* | 0 | 4 | 1 | 3 | 66 713 | 172% |
| D | Clemson, both hospital | 10 198 | 10* | 1 | 3 | 1 | 2 | 65 094 | 168% |
| E | Clemson, both Milford | 9 225 | 5 | 1 | 2 | 1 | 3 | 49 175 | 127% |
| F | Clemson, hospital, Kingsworth | 10 063 | 2 | 1 | 2 | 1 | 3 | 44 189 | 114% |
| G | River, hospital, Milford | 10 063 | 3 | 1 | 2 | 1 | 1 | 44 689 | 116% |
| H | River, both hospital | 10 646 | 10* | 1 | 3 | 1 | 1 | 65 438 | 169% |
| I | River, both Milford | 9 225 | 7 | 1 | 2 | 1 | 1 | 52 175 | 135% |
| J | River, hospital, Kingsworth | 10 063 | 6 | 1 | 2 | 1 | 2 | 53 189 | 137% |
| | <i>Points Factor</i> | <i>3</i> | <i>2.5</i> | <i>2</i> | <i>1.5</i> | | | | |

*These are assigned a worst-case number of 10 for purposes of this analysis, but these options are unavailable based on trackage and curvature of track that eliminates the ability of CSX to move intermodal trains through a northern route due to, among other things, the infeasibility of a Bexley Avenue transit

In reviewing the scoring, Palmetto Railways would dismiss any alternative configuration scoring over 50, or an increase of 35% or greater over the lowest score. Thus, alternatives A, E, F, and G present a variety of options for track access that overlay these critical issues with the minimization of environmental impacts for the CNC-Clemson ICTF location.

After consideration of these requirements, Palmetto Railways concluded that the Charleston Naval Complex (CNC) Clemson Tract (Clemson Tract) with a northern line for NS through the hospital district and a southern line near Milford Avenue for CSX (Alternative A) best meets the criteria (scoring the best) and is uniquely capable of accommodating an ideal intermodal facility with near-dock access to a deep-water marine container terminal, interstate highways, and an efficient network of existing rail lines capable of providing equal access to both of South Carolina's Class 1 rail companies.

The following table provides a summary of the current avoidance, minimization and mitigation efforts Palmetto Railways has committed to in regards to addressing direct and indirect impacts associated with the Navy Base Intermodal Facility project.

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|---|
| Resource Area | Measures |
| <ul style="list-style-type: none"> • Geology and soils | <ul style="list-style-type: none"> • Implement a Storm Water Pollution and Prevention Plans (SWPPP) as required by the National Pollutant Discharge Elimination System (NPDES) permit, including management of sediment and erosion control. • Implement a Spill Prevention Control and Countermeasures (SPCC) Plan for petroleum products. • Use Best Management Practices (BMPs) and/or methods of managing sediment and erosion control during construction pursuant to the <i>South Carolina Stormwater Management Handbook</i> (South Carolina Department of Health and Environmental Control [SCDHEC] 2005). • Capping contaminated sites within the NBIF to “seal” existing soil and groundwater contamination. • Perform all land disturbance activities in compliance the U.S. Navy Construction Process Document (Navy “Dig” Permit) which identifies the permit process and requirements for conducting construction or other land disturbing activities in Land Use Control (LUC) Areas at the former Navy Base (Charleston Naval Complex). • Development of a soil management plan during design to be implemented during construction. • Capping much of the project site with pavements to mitigate spread of existing contaminants. • Use of clean fill material. |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|---|
| Resource Area | Measures |
| <ul style="list-style-type: none"> Hydrology | <ul style="list-style-type: none"> Design culverts and/or bridges to maintain existing surface drainage patterns and to prevent erosion. Where possible, limit the placement of pilings for bridges within waterways. Design culverts and bridges to maintain existing flow and hydrology for wetland areas and to prevent flooding upstream. Provide stormwater capacity improvements by constructing new stormwater infrastructure where the existing systems are failing from lack of maintenance. |
| <ul style="list-style-type: none"> Water quality | <ul style="list-style-type: none"> Comply with requirements of the NPDES permit, including applicable groundwater and surface monitoring. Implement a SWPPP as required by the industrial storm water NPDES permit. Construct stormwater detention ponds to contain and manage storm water runoff. Implement sediment and erosion control measures to mitigate sediment and sediment-associated pollutant loading from disturbed areas. Implement dust control measures for roads and construction areas. Use of clean fill material. Employ the use of oil-water separators at the locomotive shop and the “Repair in Place” tracks to ensure treatment of any oily waste from on-terminal equipment maintenance activities. Inclusion of forebay in stormwater management system to provide pretreatment of stormwater runoff before it discharges to the primary water quantity and quality control BMP. |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|---|
| Resource Area | Measures |
| <ul style="list-style-type: none"> Vegetation and wildlife | <ul style="list-style-type: none"> Redevelopment of an existing industrial site. Replacement of significant and/or grand trees under City of North Charleston tree ordinance and payment to the tree bank account. Plant native vegetation and trees on the earthen berm along the western property boundary. |
| <ul style="list-style-type: none"> Waters of the United States | <ul style="list-style-type: none"> Locate the NBIF on an existing vacant industrial site. Design the NBIF and roadway and rail improvements to minimize impacts to waters of the U.S., such as the drayage road placement that reduce impacts to waters of the U.S. associated with Shipyard Creek. Minimize impacts by placing new rail infrastructure adjacent to existing bridges that cross Noisette Creek. Where possible, limit the placement of pilings for bridges within waterways. Use of 2:1 slopes in areas that are not bridged. Bridge over Noisette Creek would use a portion of an existing causeway to reduce impacts. Design culverts and bridges to maintain existing flow/exchange and hydrology for wetland areas and marshes. Replacement of earthen berm with a sound attenuation and security wall, where appropriate, in areas adjacent to Waters of the U.S. to avoid filling of wetlands. Submit application for Section 404 Permit as promulgated by Clean Water Act and comply with any requirements as determined by the USACE. Develop and execute wetland mitigation plan to ensure any wetland impacts have been minimized and that compensation will be provided for all remaining unavoidable impacts. |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|---|
| Resource Area | Measures |
| <ul style="list-style-type: none"> Threatened and endangered | <ul style="list-style-type: none"> Timing construction to avoid potential impacts to aquatic species. |
| <ul style="list-style-type: none"> Essential fish habitat | <ul style="list-style-type: none"> Where possible limit the placement of pilings for bridges within waterways, ensuring channels are not blocked. Require contractors to use air bubble curtains or sleeve piles to mitigate underwater noise from pile driving activities. |
| <ul style="list-style-type: none"> Traffic and transportation | <ul style="list-style-type: none"> Perform Surface Transportation Study to identify rail and traffic impacts to traffic associated with the proposed project. Project has been designed to enhance efficiency of train movements so that trains are not required to stop while accessing the intermodal terminal and exacerbating traffic congestion associated with at-grade crossings. Provide access to St. Johns Ave. for residents and businesses located on the former Navy Base and west of project North Lead railroad track. Evaluate engineering options to minimize traffic impacts near the southern loop in response to City of Charleston request. Extend Cosgrove Ave. with a new overpass over the NBIF north rail lead to facilitate access to the CNC. Construct improvements to Bainbridge Avenue and N. Hobson Avenue intersection. Maintain Viaduct Road overpass until the local segment of the port access road is complete. Construct a private drayage road between the Hugh Leatherman Jr. Terminal and the NBIF to eliminate truck traffic on local roadways. Open the gate at Turnbull Avenue to provide multiple entry/exit routes for residences along St. John's Avenue. Locate roadway improvements to minimize/avoid at-grade crossings and traffic delays associated with rail operations. Additional intermodal capacity will encourage rail use and reduce truck traffic on local roads. |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|---|
| Resource Area | Measures |
| <ul style="list-style-type: none"> Land use and infrastructure | <ul style="list-style-type: none"> Ensure the Proposed Project and its operations are consistent with zoning. |
| <ul style="list-style-type: none"> Visual resources and aesthetics | <ul style="list-style-type: none"> Construct a wall along the western boundary of the site to minimize visual impacts. Install landscaping within and around the facility footprint to reduce visual impacts. Replacement of significant and/or grand trees under City of North Charleston tree ordinance and/or payment to the tree bank account and adhere to any zoning requirements for tree plantings along building setbacks and road frontages. Provide photometric design for facility high-mast lighting to less than 0.5 foot-candles outside of property boundary. Direct operating lights downward and shield light sources to minimize light impacts to adjacent areas. Project locomotive shop and administration buildings will incorporate architectural elements from historic naval buildings to maintain and enhance aesthetics. |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|--|
| Resource Area | Measures |
| <ul style="list-style-type: none"> Cultural and community resources | <ul style="list-style-type: none"> Minimize and avoid impacts to buildings and structures on the CNC. Minimize and avoid direct interaction with historic buildings and structures. Relocation of Eternal Father of the Sea Chapel. Exploration of redevelopment opportunities for historically relevant structures including the Power House. Mitigate for community impacts associated with the project, including the loss of Sterett Hall. Support the City of Charleston and City of North Charleston in setting up Quiet Zones. Construct a landscaped earthen berm with security fence, use directional lighting, and implement other identified mitigation measures that minimize noise, visual, and air quality impacts to adjacent communities. Construct a noise abatement wall in areas where there are engineering and environmental constraints with the earthen berm. To maximize positive benefit and minimize negative impacts, an expanded Community Mitigation Plan will be developed in partnership with community organizations and State agencies and made a part of the Final EIS. A community engagement and awareness plan is being implemented to keep stakeholders and the public engaged and informed. Evaluate short and long-term employment and job training opportunities for the local community. Implement four-container-tall stacking limits to reduce visual impacts on surrounding neighborhoods. Palmetto Railways is working with the Lowcountry Orphan Relief to mitigate impacts on their location or aid in their relocation if desired. All business and residential relocations follows federal and state guidelines. |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|--|
| Resource Area | Measures |
| <ul style="list-style-type: none"> • Noise and vibration | <ul style="list-style-type: none"> • Construct an earthen berm/noise abatement wall along the western boundary of the site, between the NBIF and adjacent neighborhoods to minimize noise impacts. • Use state-of-the-art equipment, such as electric wide-span gantry cranes, that minimize sound emissions during operations. • Implement a 100 foot buffer to reduce the impacts of vibrations from construction and operations of the facility. • The existing topography of the North Lead will require a substantial cut section to provide adequate grades to accommodate train movements. This cut section will mitigate visual and noise impacts that may result from the movement of trains in and out of the facility from the north. |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|---|
| Resource Area | Measures |
| <ul style="list-style-type: none"> Air quality | <ul style="list-style-type: none"> Comply with Air Quality State Construction and Operating permit requirements, conditions, and reporting. Operate and maintain air pollution control equipment in accordance with permit requirements. Implement dust control measures (such as watering unpaved work areas, temporary and permanent seeding and mulching, covering stockpiled materials, and using covered haul trucks) in accordance with the conditions set forth in the SCDHEC Air permit issued for the Proposed Project. Reduction of truck traffic on local roads by providing additional intermodal capacity. Use electric wide-span gantry cranes that emit zero air emissions versus diesel-powered lift equipment. Construct a semi-automated facility that minimizes air quality emissions during operations as a result of increased efficiencies during the handling and processing of containers. At full build-out, use Tier 4 Utility Truck Rigs (UTR) on the private drayage road to transfer containers to the ICTF versus transferring the same containers using over the road trucks on public roadways to minimize emissions. Limit switching activity within the ICTF to Tier 4 locomotive engines at full build-out. Utilize automated gate system for the over-the-road (OTR) trucks entering/exiting the facility from the Wando Welch and North Charleston Container Terminals and an OCR portal at the connection from the facility (drayage road) to the HLT to reduce onsite idle times of trucks to 7.5 minutes/truckload and UTR to 5 minutes/truckload. |
| <ul style="list-style-type: none"> Climate change | <ul style="list-style-type: none"> See measures in Air quality |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|---|
| Resource Area | Measures |
| <ul style="list-style-type: none"> Hazardous and toxic waste | <ul style="list-style-type: none"> Implement a Solid and Hazardous Waste Management Plan. Implement a SPCC Plan. Comply with Resource Conservation and Recovery Act (RCRA) and SCDHEC requirements for storage and handling of hazardous and toxic wastes. Implement waste minimization measures. Perform all land disturbance activities in compliance the U.S. Navy Construction Process Document (Navy “Dig” Permit) which identifies the permit process and requirements for conducting construction or other land disturbing activities in Land Use Control (LUC) Areas at the former Navy Base (Charleston Naval Complex). |
| <ul style="list-style-type: none"> Socioeconomics and environmental justice | <ul style="list-style-type: none"> Placement of a noise abatement wall, and other proposed project features that minimize noise, visual, and air quality impacts to adjacent communities. Contribution to The City of North Charleston of \$8 million to mitigate the impacts to the adjacent communities including loss of Sterret Hall. Construct a noise abatement wall in areas where there are engineering and environmental constraints with the earthen berm. Palmetto Railways is working with DHEC and community groups to determine concerns and identify mitigation measures. An expanded community mitigation plan will be developed in partnership with community organizations and State agencies. A community engagement and awareness plan is being implemented to keep stakeholders and the public engaged and informed. |

| Summary of Avoidance, Minimization and Mitigation Efforts for Direct and Indirect Impacts Incorporated into NBIF Planning and Design | |
|--|--|
| Resource Area | Measures |
| <ul style="list-style-type: none"> Human health and safety | <ul style="list-style-type: none"> Provide around-the-clock security through a combination of security fencing, video cameras, and other security measures. Develop detailed pollution prevention plans and implement BMPs to minimize the potential for spills. Conduct construction and operations in accordance with appropriate regulations, permits, best practices, and codes. Placement of a noise abatement wall, and other Proposed Project features that minimize noise, visual, and air quality impacts to adjacent communities. Construct a semi-automated facility that minimizes air quality emissions during operations as a result of increased efficiencies during the handling and processing of containers. Employ the use of automated switches to eliminate the need for train crews to get out of trains to manually throw switches and thus enhancing the safety of railroad workers. Use of inter-box connector (IBC) carts to provide enhanced safety for railroad workers by avoiding slip, trip, and fall incidents while accessing railcars to (un)lock IBCs on containers. Employ the use of an automated gate system to eliminate the need for railroad workers to complete inbound, container and chassis damage inspections by walking in a congested gate area thus enhancing safety of railroad workers. |